NATIONAL PETROLEUM NEWS

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Anti-Knock Value of Natural Gasoline Established by Research

By V. B. Guthrie
N. P. N. Managing Editor

ATLANTIC CITY, Nov. 1

THAT natural gasoline will give motor fuel the desirable characteristics that will enable the Independent jobbing branch of the industry to sell it in competition with the gasoline of changed standards being marketed now by the big integrated companies was the message Dr. G. G. Brown, professor of chemical engineering at the University of Michigan, brought to the National Petroleum Marketers Association, in session here Oct. 26, 27, and 28.

These desirable attributes may be summed up as adding to the motor fuel the anti-knock qualities the public demands today; increasing its volatility; providing for quicker acceleration of the engine; and—perhaps a negative quality—bringing no decrease in the power value of the motor fuel through the use of the lighter natural gasoline fraction blended with it.

He showed a definite relationship between volatility and the percentage of natural gasoline in the blend by stating that the volatility of a motor fuel could be kept fairly constant over the winter by adding one per cent of natural gasoline to the blend for each degree the temperature goes below 75 Fahr.

Dr. Brown spoke by authority of the National Gasoline Manufacturers' Association, for whom he has been carrying on a research program at the University of Michigan laboratories to determine the motor fuel qualities of natural gasoline. His talk on the program was based on the results of these tests which are shortly to be published in full through the association. He answered questions from the floor for fully as long as he talked officially, and it was in the course of his answers to these questions that points on motor fuel were brought out which have been bothering the jobbing trade, forced now to sell motor fuel against the highly advertised fuels of the big companies.

Association Has Exhibit

THE gasoline manufacturer's association also had an exhibit at the convention showing something of the nature of the research program being carried on. Dr. Brown and A. V. Bourque, secretary of the association, were on hand to explain to the jobbers generally the nature and extent of their research work. Mr. Bourque introduced Mr. Brown to the jobbers present. D. F. Buchanan, of Chestnut & Smith, Tulsa, chairman of the association's educational campaign, was to have spoken but was delayed and did not reach the meeting in time.

The keen interest of the jobbers in this session of the convention showed their recognition of the fact that the big companies have created in the minds of the public a demand for anti-knock motor fuel which the Independent jobbers must meet some way, and also that the advertising and marketing of special gasolines, such as The Texas Co. has been doing have complicated their problems; in short that the old standards upon which motor gasoline was sold to the public are fast disappearing.

President L. V. Nicholas, of the National Petroleum Marketers Association, brought this home to the audience when he said that he understood two other big oil companies, within the next three months, expect to switch their motor fuels over to meet the standard established by The Texas Co., of a 400-end point fuel.

As against the competition of these low end point fuels, the jobbers brought out that they must meet the competition of the anti-knock gasolines sold by other of the big companies and selling at a premium—sometimes off-color stuff running as high as 480 end point.

Old Theories Upset

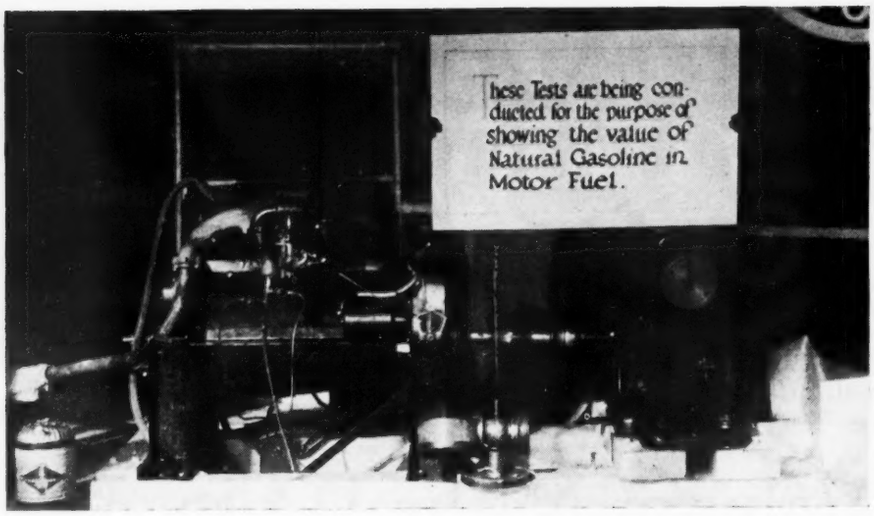
DR. BROWN upset many of the generally held views on motor fuel qualifications of the present days. Although he was giving entirely the results

Only Three Votes Against Nicholas' Re-election

ATLANTIC CITY, Nov. 1.—L. V. Nicholas, president of the National Petroleum Marketers Association, today, was reelected, three persons voting against him.

Four new directors were added. They were L. A. Lommel, Bartles-Shepherd Oil Co., Waterloo, Ia.; S. W. Rusk, Rusk Oil Co., Philadelphia, Pa.; J. B. Belk, Albemarle Oil & Gas Co., Charlottesville, Va., and E. E. Andrews, Pennsylvania Oil Co., Madison, Wis. Mr. Andrews succeeds S. D. Hastings, Barkhausen Oil Co., Green Bay, Wis., at the latter's request.

The three-year directors were re-elected as a group. They are: F. E. Bergfors, Quincy Oil Co., Quincy Adams, Mass.; F. H. Buehler, Dakotah Oil Co., Madison, S. D.; R. G. Cunningham, R. G. Cunningham, Oil Co., Miami, Okla.; A. W. Long, Long Oil Co., Manhattan, Kan.; R. N. Reed, Reed Oil Corp., Atlanta, Ga.; W. H. Trimble, Western Oil Refining Co., Indianapolis, Ind.; H. M. Wilson, International Oil Co., Minot, N. D.; J. S. Wilson, Wilson Gas & Oil Co., Lancaster, S. C., and J. M. Wolf, Southern Minnesota Oil Co., Fairmount, Minn.



Automobile engine set up as part of the display of the Natural Gasoline Manufacturers Assoc. at the Atlantic City convention to demonstrate the knocking qualities at different fuels.

of experiments in the research program of the natural gasoline manufacturers, which he explained were limited to natural gasolines and motor fuels from certain crudes, the jobbers were inclined to pick generalizations from his remarks. One of these was to the effect that a motor fuel blend with 30 per cent natural gasoline gave a jobber a suitable anti-knock gasoline, which Dr. Brown denied in general. If this were true, the question was asked was there enough natural gasoline to go around.

After convincing his listeners that there was enough natural gasoline being produced to meet a general demand for its use in motor fuel blends, Dr. Brown brought out that the answer to the problem could not be to put 30 per cent of natural gasoline into all straight-run or cracked motor fuel, and that this should be left to the refiner.

"Although blends are being made containing 25 to 35 or 40 per cent of natural gasoline which are highly satisfactory fuels and sell at a premium as an anti-knock fuel, or at a premium as a high test fuel, and cost little or no more to produce than ordinary U. S. Motor," he said. "That does not mean that you can take an ordinary U. S. Motor gasoline and dump in 30 per cent of natural gasoline and have anti-knock fuel."

"We might say that the ease of starting an engine is directly proportional to the amount of volatile material contained in the fuel, or, for lack of a better term at the present time, we call it the natural gasoline equivalent," said Dr. Brown in summarizing his talk. "We speak of a fuel which has the same starting properties, the same volatility as a blend of U. S. Motor with 20 per cent natural gasoline, as a fuel having a natural gasoline equivalent of 20.

Knock Value of Natural Gasoline

"THE ease of starting increases directly with the natural gasoline equivalent, without limit. Anti-knock properties of blends made by blending natural gasoline with motor gasoline are worthy of serious consideration. We can't say definitely how good an anti-knock it is because the natural gasoline varies depending upon where it is obtained. Also the anti-knock properties of the refined product vary depending upon the crude from which it is produced and also depending upon the method of production.

"But, in general, when we take natural gasoline from the same field as the refined, uncracked product is produced in, up to about 50 per cent of natural gasoline in the blend the natural gasoline has an anti-knock value from three-tenths to six-tenths that of benzol.

"For best acceleration under warm weather conditions, a fuel equivalent to about 15 to 20 per cent of natural gasoline in the blend should be used.

"Our work indicates that, in order to obtain an approximately constant engine performance, as the temperature varies from summer to winter, the gasoline should be increased in volatility about one natural gasoline equivalent for every one degree drop in temperature below 75 Fahr. The refiner can produce and market a gasoline at different times of the year which will give practically the same engine performance, ease of starting and acceleration, by blending a sufficient amount of the highly volatile compounds as can be obtained from natural gasoline, equivalent to one per cent of natural gasoline in the blend for every degree Fahr. decreased below 75 Fahr.

"That does not mean, if you have a fuel which gives perfectly good satisfactory service at 95 Fahr. that you should add 20 per cent of natural gasoline to it when the temperature drops to 75. It simply means, as you go below 75, the refiner should add, if he wishes to produce a gasoline of constant engine performance, one per cent of natural gasoline for every degree Fahr. drop.

Blending Requires Experience

"THAT blending should always be done at a place where the equipment, facilities and the knowledge are available for the proper handling of the natural gasoline. I don't believe that anyone would recommend that the small distributor buy a few tanks or cars of motor gasoline and then buy a car or two of natural gasoline and then try to pump them together in his motor truck. He is apt to get into trouble.

"Although this suggestion of adding one per cent of natural gasoline for every one degree Fahr. drop below 75 is impractical for obvious reasons, our results indicate that such practice would be desirable from the user's standpoint. The practical conclusion is that we are not maintaining sufficient volatility in our winter gasoline to give even reasonably good performance under atmospheric conditions corresponding to temperatures below 45 Fahr. and that this volatility can be easily obtained by blending more natural gasoline. Relatively our winter fuel is not sufficiently volatile, or our summer fuel is too volatile. In many instances the latter has been as true as the former.

"There is no loss of power or no losses in fuel economy when the volatility of the gasoline is increased up to about 50 per cent natural gasoline

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Virginia Independent Oil Men's Ass'n., Richmond, Va., Nov. 10.

Wisconsin Independent Oil Jobbers' Association, Assembly Chamber, State Capitol, Nov. 11.

Texas Independent Oil Men's Association, San Antonio, Nov. 12 and 13.

American Association of Petroleum Geologists, New York City, Nov. 15, 16, 17.

American Oil Men's Association, Congress Hotel, Chicago, Nov. 16, 17, 18.

Rocky Mountain Oil & Gas Association, Montana Chapter, Great Falls, Mont., Dec. 1, 2, 3.

American Petroleum Institute, annual meeting, Mayo Hotel, Tulsa, Dec. 7, 8, 9.

Nebraska Independent Oil Men's Association, Hotel Fontennelle, Omaha, Dec. 16, 17.

Michigan Independent Oil Men's Association, Detroit, Feb. 10 and 11, 1927.

American Oil Burner Association, Broadway Auditorium, Buffalo, N. Y., Apr. 5, 6, 7.

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M. J. Cowden, Pennsylvania Oil Products Refining Co., Warren, Pa.; R. L. Wotowitch, Cities Service Co., New York; H. S. Hayden, Pennsylvania Oil Products Refining Co.; and O. V. Tuttle, Empire Refineries, Inc., Tulsa.

equivalent, even in hot weather, that is 80 Fahr. or above.

"High volatility means low consumption by weight, better anti-knock properties, excellent acceleration with maximum power and fuel economy and high volatility does not necessarily mean a low end point."

End Point Not Vital Factor

IN his remarks and in the course of questions put to him, Dr. Brown emphasized his belief that end point is not the important factor in determining motor fuel quality it has been regarded. The distillation curve up to 180 or 190 Fahr. he regards as a very important factor and that, with this portion of the curve within proper limitations, the final boiling point could be left to itself except where it might run high enough to work past the piston rings in liquid form from the cylinder and lead to crankcase dilution. Asked as to what percentage of the fuel should come over in a distillation test below 180 Fahr., Dr. Brown said approximately 25 per cent when the temperature is around 85 in the summer and 45 to 50 per cent below 200 Fahr. when the temperature is below freezing.

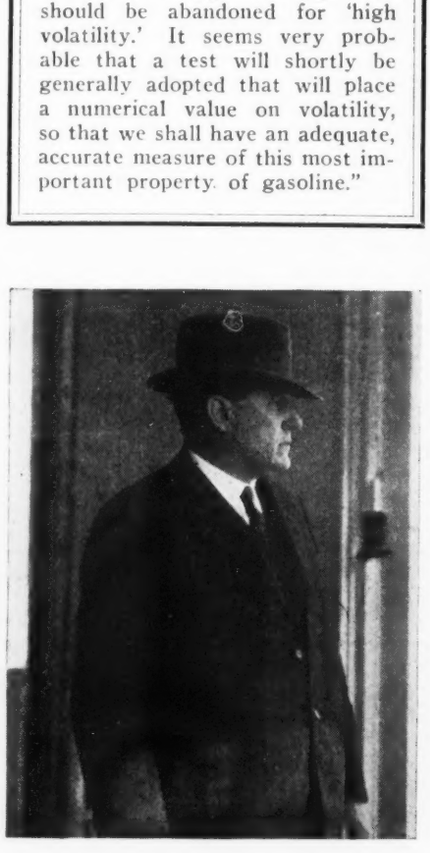
"The acceleration is due largely to that part of the distillation curve which comes over below 200 Fahr.," Dr. Brown said. "We have proved rather conclusively that, if you have a fuel which is more volatile up to 200 the rest of it is almost negligible within limits. You can produce a fuel by taking ordinary motor gasoline and putting in enough of the light fractions to bring the front part of the distillation curve below another fuel you are using for comparison, and secure better engine performance than you can by lowering the major part of the curve and leaving that part below 190 alone. Our results show that it is not necessary to have an end point of 360; that you can get just as good results with an end point of 430. The general public should get the notion out of its head that the end point is the whole story."

Defines High Test Gasoline

In answer to a question from the floor, Dr. Brown said that high test gasoline does not mean high gravity gasoline.

"High test gasoline, to my mind and I think to many people, indicates a low end point, low initial and low distillation curve throughout the entire range", he said. "In some states it may mean high gravity, but generally not.

"The confusing term 'high test' should be abandoned for 'high volatility.' It seems very probable that a test will shortly be generally adopted that will place a numerical value on volatility, so that we shall have an adequate, accurate measure of this most important property of gasoline."



L. D. Pierce, Pennsylvania Petroleum Products Co., Providence, R. I.

Tests had been made at the university, Dr. Brown said, on different fuels with hot manifolds and with cold manifolds, and, as far as could be told, there was not loss of power under any conditions when using a gasoline with a 430 end point and increased volatility equivalent to about 50 per cent of natural gasoline in the blend. Carburetor adjustments in these tests remained as set for the car to run on U. S. Motor fuel.

Working on Measure of Volatility

IN describing the maner in which the research work was being carried on Dr. Brown said that volatility was regarded as the important characteristic of the motor fuel to be studied, that is the amount of the fuel vaporized under conditions met with in actual engine operation. He said the oil industry and the scientific world at present had no recognized standard measure or test for this volatility, and that work to devise such a test was being carried on at the other laboratories as well as the University of Michigan and it was hoped such a method could be announced.

Laboratory tests and road tests have been carried on to determine methods of increasing volatility of motor fuels by blending them with more volatile compounds, natural gasoline being the most generally available source. Various types of engines have been used and fuels have been U. S. Motor as a standard, blends of this product with 10, 20, 35 and 50 per cent natural gasoline, straight natural gasoline alone, various benzol blends and high test gasolines. These fuels have been largely made from Mid-Continent crudes and Mid-Continent natural gasolines, which fact Dr. Brown said should be kept in mind in considering results.

In testing for ease of starting, for example, tests with various fuels were made on three different engines of different types with the heat removed from the manifold to stimulate starting conditions and the records taken of the number of revolutions of the engine required to start it. With a straight run gasoline it took 8 revolutions before it would start on an air-cooled six-cylinder, valve-in-head motor. When ten per cent natural gasoline was added, the number of revolutions necessary was decreased from eight to six; with a 25 per cent blend to less than five and with a 50 per cent blend the number of revolutions was cut in half. With over 50 per cent natural gasoline it was found the gain in ease of starting was relatively smaller.

In determining acceleration the minimum number of revolutions per minute at which the throttle could be opened suddenly to full position without backfiring was studied, as well as the time to accelerate from a low to a high speed. With a U. S. Motor gasoline it was found in certain tests that 1000 revolutions per minute of the engine were required to prevent backfiring. With a 50 per cent natural gasoline blend it was found that was decreased to 700.

The far west at the Atlantic City convention: L. A. Miller, Aero Oil Co., Cheyenne, Wyo., and H. E. Thompson, Thompson Lubricating Co., Tacoma, Wash.

G. H. Alsup, Jr., Consumers Supply Co., Murfreesboro, Tenn., and Homer F. Gay, Empire Refineries, Inc., St. Louis.

Jobbers Discuss Gasoline Qualities with Scientist

H. F. Stoke, Stoke Oil Co., Roanoke, Va.—There is a wide variation in the anti-knock qualities of various crude oils. Is there the same variation in natural gasoline from various fields?

Dr. Brown—We don't yet know for sure whether the different natural gasolines from the various fields have marked difference in anti-knock properties or not. We have collected a large number of samples and expect to have some results within a few months. I imagine there is a rather noticeable difference. That is just my judgment unsupported by experiment.

Mr. Stoke—I bought some vapor phase cracked gasoline from the Mid-Continent field to compete with Standard Oil gasoline. I found it very good as far as anti-knocking qualities were concerned, but it was extremely slow to warm up. The engine would pop. It was slow to start.

To overcome that I purchased some Grade A natural gasoline from Arkansas, and I blended about 25 per cent of that with this cracked gasoline and it has given me splendid results. It starts very quickly and doesn't knock and the mileage is good.

I had about 5000 gallons of the vapor phase gasoline and I poured in a little less than 2000 gallons of the natural gasoline, introducing it at the bottom of my tank.

Dr. Brown—The refiner should have sold you the properly blended gasoline in the first place. There are a number of refiners who are producing gasoline of exactly that general nature, off color, with poor volatility, but with the making of a good anti-knock fuel. If you can persuade the refiner to make it a volatile fuel you have a possible solution.

Paul Himmelfarb, Penn Oil Co., Washington D. C.—What would you recommend as a substitute for a 40 per cent benzol blend?

Dr. Brown—It is possible ordinarily, not always, to improve the knocking qualities of gasoline by rather violent cracking, provided it is not acid refined too thoroughly afterwards. If the fuel so produced is not as volatile as you would like to have it, with an end point perhaps even of 450 Fahr. bring up the volatility, preferably with natural gasoline obtained from the same field. Whether it will be as good anti-knock as 40 per cent benzol blend depends on how it is cracked and other factors, but it is possible.

President Nicholas—Did I understand you to say that, from a power standpoint, which is mileage, a 437-end point gasoline with proper initial is preferable to say a 390- or 400-end point gasoline?

Dr. Brown—No. I did not say that a 390-end point gasoline gave less power than a 430- or 400-end point gasoline. I do want to make this point clear, that there is no increase or decrease in fuel economy produced by lowering the end point from 430 to 390 or even 370.

E. H. Wiet, Harvey Young Oil Co., Tulsa, Okla.—Did you say a 60 gravity gasoline, 100 initial, 400-end point, is not worth more in the motor than a 58 gravity, 120 initial, 437-end point gasoline?

Dr. Brown—No. I certainly did not intend to convey that impression. I said, if your first fuel has 100 in tial, 400-end point and 58 gravity, and your second fuel has 99 initial, and is more volatile up to 190 Fahr. and a 430-end point, it may be just as good as far as motor performance goes. You must have the light volatile material there, and it doesn't make any difference whether you have the necessary volatility with an end point of 430, or whether you have the volatility with an end point of 400; you must have the volatility for good performance.

H. F. Stoke, Stoke Oil Co., Roanoke, Va.

Rest of N. P. M. A. convention report is on pages 48-P to 58.

C. S. Rosenthal, active head of the Apex Motor Fuel Co., Chicago.

A morning constitutional on the boardwalk at Atlantic City. W. P. Jacobi, Wadhams Oil Co., Tulsa, and J. V. McCormick, Independent Oil & Gas Co., Tulsa. L. V. Nicholas, President of the National Petroleum Marketers Assoc. and S. J. Hunt, Armould Oil Co., Quincy, Ill.

Carter, Humble and Magnolia Cut Mid-Continent Crude Prices

Staff Special—By Telegraph

TULSA, Nov. 2

THREE major purchasing companies have cut crude oil prices in the Mid-Continent field, the amounts of the reduction ranging from 15 cents a barrel for heavy crude to 87 cents a barrel for crudes with the highest percentage of gasoline.

Nov. 1 the Humble Oil & Refining Co. reduced its prices in north Texas, President W. S. Farish issuing at the same time a statement in which he said the present world oil market would not support present crude prices in the United States.

Nov. 2 the Carter Oil Co. posted the same price schedule as the Humble had posted the day previous for the oil it buys in Kansas and Oklahoma. The Carter is not the principal purchasing company in this territory. At present it is running 100,000 barrels of oil daily.

Nov. 2 Magnolia Petroleum Co. met the reductions of Carter and Humble on all crudes it buys on a gravity basis in Oklahoma, Kansas and Texas.

R. M. Young, president of the Carter company, also issued a statement to the effect his company had expected a crude price reduction for 60 days, but it had not felt forced to reduce its own prices.

Although the Carter has been active in buying crude for several years past, running it through its affiliated pipe line, that of the Oklahoma Pipe Line Co., it has not heretofore posted a price. The Carter has been running more oil out of Seminole than any other company, its daily runs last week averaging close to 25,000 barrels. Facilities under construction will enable it to handle 45,000 to 50,000 barrels within the next month. Probable increases in production at Seminole were probably responsible for the reduction in price by this company.

The Carter prices are lower than the schedule of the Prairie Oil & Gas Co., principal purchaser of Kansas and Oklahoma crude, by 15 cents for the lowest gravity and 87 cents for the highest. Seminole crude receives a cut of from 51 to 57 cents a barrel.

Mr. Farish's statement was:

"The effect of increased crude production and the number and extent of important new producing areas in Texas and other parts of the United States has resulted in lower prices in the world's markets for various petroleum products. This fact, coupled with the necessity on the part of this company and the entire industry for storing some additional crude oil in the face of the present more than ample stocks not only warrants but dictates a reduction in the price of crude.

"This is emphasized by the fact that this situation comes on us at a time when the consumption of gasoline, our principal product, is starting its usual winter decline.

"Refinery experience supported by numerous laboratory tests on crude of different gravities over a long period indicate to us that a 5-cent differential per degree of gravity much more nearly reflects the relative value of the light crude on today's markets for petroleum products than does the 8-cent differential previously in effect."

* * *

HOUSTON, Nov. 1.—The Humble Oil & Refining Co. today assumed leadership in north Texas crude oil market and posted a reduction in crude prices ranging from 15 cents a barrel for 28 to 28.9 gravity to 87 cents a barrel for 52 gravity and above. The new price of 38 to 38.9 gravity oil, $2 a barrel, represents a reduction of 45 cents.

The new prices for the various grades follow:

	New price	Old price
28—28.9	$1.50	$1.65
29—29.9	1.55	1.73
30—30.9	1.60	1.81
31—31.9	1.65	1.89
32—32.9	1.70	1.97
33—33.9	1.75	2.05
34—34.9	1.80	2.13
35—35.9	1.85	2.21
36—36.9	1.90	2.29
37—37.9	1.95	2.37
38—38.9	2.00	2.45
39—39.9	2.05	2.53
40—40.9	2.10	2.61
41—41.9	2.15	2.69
42—42.9	2.20	2.77
43—43.9	2.25	2.85
44—44.9	2.30	2.93
45—45.9	2.35	3.01
46—46.9	2.40	3.09
47—47.9	2.45	3.17
48—48.9	2.50	3.25
49—49.9	2.55	3.33
50—50.9	2.60	3.41
51—51.9	2.65	3.49
52 and above	2.70	3.57

In making its reduction, the Humble changed its differential from 8 to 5 cents for each degree of gravity on the crudes affected in the Ranger, North Texas, Mexia, Powell, Richland, Currie, Lytton Springs, Wortham, Moran and Nocona fields.

Except for cutting all grades in Gray county 10 cents a barrel from the previously existing schedule, the new price does not affect oil purchased in the Texas Panhandle.

Air and Gas Lifts to be Used in Seminole; Field May be Bigger than Cushing

By A. F. Hinton
N. P. N. Staff Writer

TULSA, Oct. 30

OKLAHOMA'S largest field since Cushing is what Seminole is destined to become, or some very able observers are badly fooled as to its potentialities.

Seminole, the roaring, driving, seething vortex of ceaseless, night-and-day activity. Men working without thought of hours or overtime to get their wells down to the Wilcox sand; then working just as hard to figure out what they will do with the oil after they have it to the surface.

Roads clogged with teams, trucks and cars. Farms where, until a few weeks ago, corn and cotton were peacefully waiting for the harvest, now cluttered with pipe lines, long batteries of tanks, slush pits full of oil, straining pumps.

Dominated over by towering 112-foot rotary derricks. Air full of the clank of rotaries, exhaust of drilling engines, gas, steam, smoke, shouts, curses. That's Seminole.

Seminole burst upon the oil fraternity of Oklahoma almost without warning, growing into full stature almost over night. It reached the major production class before it has gotten well started on its career. Its first wells were large producers and made the play appear an ordinary small-area Wilcox sand development. An immediate drilling campaign, following completion of the discovery wells, resulted in other big wells, and the industry began to realize that the producing wells were scattered over a considerable area. Suddenly, 10,000-barrel wells became the rule rather than the exception. The field was nearly three miles long. It became apparent here was a pool of vast possibilities.

250 Wells Drilling

IN its present stage of development, Seminole has 24 Wilcox sand wells producing better than 110,000 barrels daily, in addition to some 13 wells in the Hunton lime, producing a comparatively inconsequential 9800 barrels daily. Out of about 250 wells drilling in the immediate vicinity, there are 162 on locations which cannot be regarded as anything other than proven, in that they are located between producing wells, and there is no reason now to doubt that all of them will make wells.

Present production extends from the southeast corner of 14-9-6, to the northwest corner of Sect. 35, or slightly over two and a quarter-miles as the crow flies. In the other direction, Wilcox wells are producing from the southeast corner W½ NW of 26 to the southwest corner S½ NE of 24, or 9500 feet. In addition, the Wilcox is producing 4500 barrels daily in the Searight pool, about three miles northwest of the present outposts of Seminole production, and it is entirely possible that drilling may link the two pools together with practically continuous production.

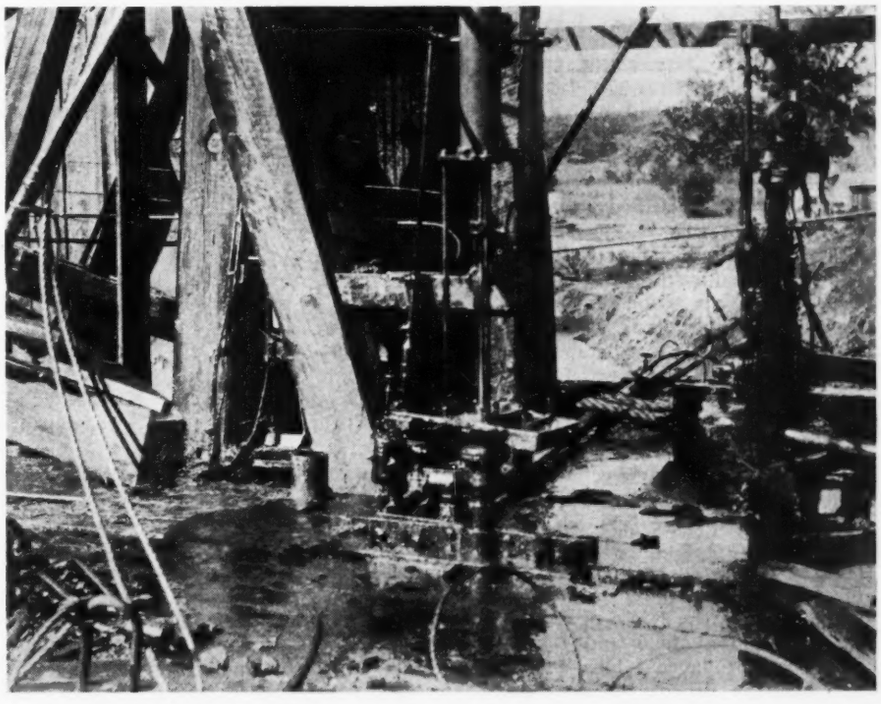
If such a union of the two pools takes place, the field would then be about seven miles long between present limits of production, and there is nothing to prove that the present limits will not be pushed out indefinitely to the northwest and southeast. The farthest south wells in Seminole are the highest structurally in the entire field and among the largest producers. In other words, it is entirely possible that the richest part of the field may lie south and southeast of present production.

Limits May Be Extended

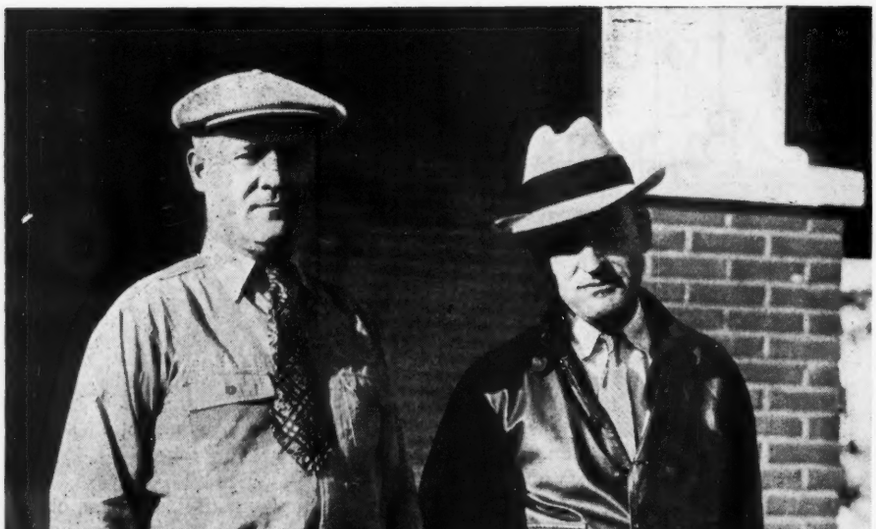
IN a field at Seminole's stage of development, there is of course lots of room for high and lofty guessing as to its area, future, and maximum production, and the imagination must be drawn upon heavily to fill in the spots where actual known conditions are lacking. It is possible to conjure up a picture of Seminole joining the select few of the oil fields in the world's history that have produced 300,000 barrels daily. If it is to step into the place so long held by Cushing as Oklahoma's largest field, it will have to bring forth better than that.

Who can say it won't do it? Judging by the size of the wells coming in lately and by the area of the field as now known, such a prediction is not to be scoffed at.

If there is proration of runs, if pipe line facilities remain inadequate, or if the operators are able to agree upon and enforce a shut down agreement that will work, the field will not reach as high an output as it would if drilling proceeds at unabated speed. For instance, the sensational wells drilled in during the past week open up large areas for drilling. It remains to be seen whether the operators and the pipe line companies can do anything toward cutting down the number of wells that ordinarily would be started in these areas. There are 160 some-odd wells drilling on so-called proven locations. It is likely that 90 per cent of these wells will be completed in 60 days, by Jan. 1, 1927. That will mean 144 completions by that time. Suppose that 10 per cent of these wells prove to be failures, even though they are in territory now apparently proven. That takes off 14 wells, and leaves 130 added producing wells. Inasmuch as the wells now producing are averaging around 5000 barrels each in present production—not initial production—it certainly seems conservative enough to give



Amerada Petroleum Corp. No. 1 Killingsworth, using gas lift as aid to flowing. In center of picture is a water well on same derrick floor, with steam head pump. Seminole field, Okla.



Pioneers of Seminole, in the production department of the Indian Territory Illuminating Oil Co., whose first wildcat well in 24-9-6 was the forerunner of the present development. Left to right, M. J. Kirwan, general manager, and C. O. Rison, general superintendent. Rison is wearing his new leather jacket and new velour hat, which he won betting on how much oil his company's No. 3 Bowlegs would make. It produced 10,500 barrels and he replenished his wardrobe.

these 130 wells an average initial output of 2000 barrels.

There you have 260,000 barrels as the added production by January first. Then supposing that by that time, the wells now producing 110,000 barrels have declined 40 per cent, they will still be producing 66,000 barrels daily. Add that to the 260,000 barrels mentioned above, and you have 326,000 barrels as the field's production when Christmas bills are being received, if general conditions in the industry are unchanged.

Contingencies May Interfere

OF course there is the ever-present possibility that production may start going to the bad at any time, and that water encroachment may take its toll, as it has done in many other Wilcox sand fields. Apparently, however, there is a very thick body of sand, water has shown in only two producing wells as far as known. Practically all companies are making preparations to stimulate production artificially as soon as their wells show signs of dropping off. It is also well to remember that the Wilcox sand at Tonkawa, for instance, is still producing 20 per cent of its maximum output, two years after it reached its peak.

The lowest producing well in the Wilcox sand is the Gypsy Oil Co. No. 1 Fixico, in the SWc N½ SE of 26-9-6, which shows a minus elevation of 3284 feet, as compared with minus 3089 feet in the Sinclair Oil & Gas Co. No. 1 Cudjo "B", in the NWc of 35, the highest well in the field and the farthest southwest producer. The lowest point at which the Wilcox has been found so far is in the Gypsy No. 2 Fixico, a location east of No. 1, which got the sand at minus 3311 feet. This well has several hundred feet of oil in the hole, but does not flow and has not been completed for a producer. It is 96 feet lower structurally than its south offset, which is Independent-Garland No. 3 Fixico, on the discovery lease.

Two Domes Indicated

STRUCTURE contours drawn from information at present available indicate the existence of two large domes with a syncline between, the Gypsy-Fixico well being in the lowest portion of this depression. There is at present no control by which the northern dome can be contoured to the northwest of the farthest producing well. The same condition exists as to the southern dome, which is open to the southeast. The total rise of the Wilcox sand from the lowest to the highest well in the productive area is 222 feet. About 5000 feet southwest of the Sinclair well mentioned above as being the highest structurally, a recently-completed dry hole had a hole full of water in the Wilcox at minus 3418, or a dip of 329 feet. This dry hole was drilled by the Amerada Petroleum Corp. in the NEc NW SW of 34, and was drilled to total depth of 4350 feet.

Surface geology disclosed a fault running northwest and southeast between the Sinclair well and the Amerada dry hole, entering Sect. 35 at about the center of its west line, near several shallow gas wells drilled some time ago. Whether the large dip between the two wells is due in part to the influence of this fault remains to be proven by the drill. In other parts of the field, however, other surface faults apparently do not extend far enough down to have any effect on sub-surface conditions. Production already has been found on both sides of the fault running through sections 23 and 24, on a northwest-southeast course practically parallel to that of the fault in sections 34 and 35. Trend of production in the field so far is approximately parallel to these faults, and closely follows the direction indicated by surface geology, although there is little or no apparent relationship between surface and sub-surface structure.

Wilcox sand oil in Seminole averages about 41 degrees gravity at the well. In a number of cases its temperature has been reported as high as 112 to 118 degrees F., with average probably around 95 degrees. Some wells showed increasing oil temperatures, indicating an early appearance of water, according to generally accepted theories, but so far only a small amount of water has shown up in the field.

Gas-Oil Ratio Is Low

AN interesting feature is the extremely low gas-oil ratio, or gas factor, which is only about 500 cubic feet of gas per barrel of oil, on the average. Rock pressure of the gas has not been determined, but is undoubtedly low. Wells making as high as 8000 barrels of oil daily will make only from two to three million feet of gas. There is no separate gas sand, nor no high pressure gas strata which must be penetrated before getting to the oil sand. What gas exists is in the top of the Wilcox, and is believed to be dissolved gas from the oil rather than a separate body of natural gas. It is very rich in gasoline content, making as high as four gallons per thousand cubic feet.

The low gas factor indicates that the wells will not flow naturally over a great length of time, and this is leading most companies to provide means of artificial stimulation for use when conditions make it necessary. In general, they plan to use compressed air or gas to lift out the oil as soon as a well starts flowing by heads. It will be the first instance in Oklahoma where general use of air lift is resorted to in a flush field, before wells have been allowed to decline so far that their operations by any method becomes unprofitable. It is likely the air lift will be successful in keeping production considerably above what it would have been without its use.

One company, the Amerada Petroleum Corp., has been using a gas lift on one of its wells for a month or more. This particular test is still in the experimental stage, and there is little to determine yet as to whether the gas lift has been a help to the well or not. When first applied it brought about a considerable increase in production, but when the gas was off for a week recently, the well produced as much oil as it had been producing when the gas pressure was on.

This well is now producing 2660 barrels, as compared with a maximum in-

(Continued to page 172)

Safety Men Protest Congress' Gagging Mines Bureau by Lack of Funds

By Roger B. Stafford
N. P. N. Staff Writer

DETROIT, Oct. 29

COORDINATION of all petroleum safety work in the United States will be striven for with greater effort the coming year by the petroleum section of the National Safety Council. Officers and members of the petroleum section, which has just concluded a three-day convention here in connection with the annual congress of the national safety organization, have pledged themselves to labor ceaselessly until safety becomes a religion in the oil industry.

Three major points in this attempt for coordination have been decided on.

1. A committee comprised of E. J. Sene, Vacuum Oil Co., New York, retiring chairman of the petroleum section; D. J. Wallace, Humble Oil & Refining Co., Houston, and V. R. Currie, The Texas Co., Houston, general chairman of the section for the ensuing year, will draft resolutions asking Congress to appropriate to the U. S. Bureau of Mines sufficient funds to enable the bureau's engineers and scientists to appear before conventions to tell of the work those men have accomplished or the facts vital to industry that they have found in the field.

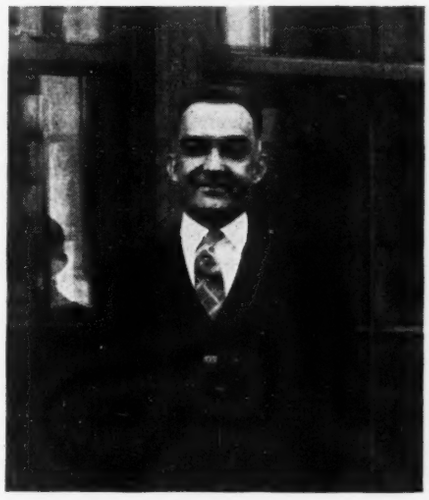
2. A committee of which Mr. Sene is chairman will continue to cooperate with the American Petroleum Institute to safeguard the employes and property of the oil industry against preventable hazards.

3. A membership campaign will be conducted to get into the petroleum section of the N. S. C. as complete a representation of the petroleum industry as is possible.

New Officers Chosen

DR. R. P. ANDERSON, technologist, American Petroleum Institute, New York, was reelected vice general chairman. Thomas W. Waddington, mechanical superintendent, Bayway refinery, Standard Oil Co. of New Jersey, and Ray E. Miller, director, Petroleum Safety Council, Mid-Continent Oil & Gas Association, Tulsa, were reelected chairmen of the Atlantic and Mid-Continent regions, respectively. Charles M. Butler, General Petroleum Corp., Los Angeles, was elected chairman of the Pacific region, succeeding Roy W. Kelly, formerly of the Associated Oil Co. but now with the Southern Pacific railroad. Capt. A. A. Nicholson, The Texas Co., New York, was appointed secretary.

The departure of Mr. Kelly from the oil industry left the petroleum section minus one of its leaders in the endeavor to draft a safety code for use in all branches of the oil industry. However, work on a code will be pushed forward, Mr. Currie said.



V. R. Currie, The Texas Co., Houston, elected general chairman, petroleum section, National Petroleum Council

A protest against the appropriation of only $2,000 to the Bureau of Mines for traveling expenses to conventions arose when it was learned that neither W. P. Yant nor H. C. Fowler of the bureau could be present to read their paper "Hydrogen Sulphide Poisoning in the Texas Panhandle." The paper, which was published in the Oct. 27 issue of National Petroleum News, was read by J. J. Forbes, Pittsburgh Experiment Station of the bureau.

Chinche, Says Wallace

THE $2,000, it developed, was divided among 20 departments in the bureau so that each department had only $100 to spread first hand among all American industry that valuable information the bureau's engineers and technologists is discovering. Mr. Wallace described Congress' policy as chinche and asked to have that word embodied in the resolutions of protest which members of the section are to present to their congressmen. Webster defines chinche as miserly or niggardly.

Mr. Miller said conditions in the Panhandle were bad. He said a great deal of safety appliances had been shipped into the district but much of it had never been unpacked. He asserted that under many derrick floors there was so much trash that workers could not get out quickly to escape the hydrogen sulphide gas. He charged that many companies operating there had not accepted the invitation of the Petroleum Safety Council to participate in safety work.

Mr. Wallace at the opening of the convention related some experiences in safety work and the outlook for increasing safe practices in the producing fields. His talk was impromptu. He struck a keynote of optimism.

Labor Turnover and Safety

"LOW labor turnover, economical management and an excellent safety record have been found generally to exist side by side," said F. A. Scofield, manager of industrial relations, Associated Oil Co., San Francisco. "Whenever a division has an excessive labor turnover whether or not due to causes under the control of the local superintendent or agent, this has had an important relation sooner or later with waste in productive effort and numerous accidents. The problem differs, of course, in various companies, and it may not always be desirable to have such a coordination between the various activities but whenever such a plan is feasible, it is generally possible to effect economies in management because fewer staff men are concerning themselves with the personnel program.

"In 1920 when the industrial relations department of our company was first organized, it was found that the cause of accidents per payroll dollar was running at an excessive rate. The number of accidents and number of days lost from the meager statistics which were available, clearly showed that a considerable improvement could be made. It was felt at that time that safety was only one aspect of the entire personnel program, and it was early decided to coordinate accident prevention with wise employment policies, good housing, sanitary working and living conditions, and fair dealing with employes as to transfers, promotions, and grievances.

"A statement has already been made that low labor turnover and low accident rates may ordinarily be found side by side. In 1925 the average number of employes was nearly twice as large as in 1921, but during this period the net labor turnover decreased from approximately 67 per cent in 1921 to 47 per cent in 1925.

Accidents Among New Employes

"DURING the peak of the flush production in southern California when excessive drilling was taking place the average number of employes increased very rapidly with a consequent increase in the net labor turnover. Strike conditions were also met during this five-year period, but the effect of this on the labor turnover and accident

rates was not as great as that of the flush production period.

"In spite of the increase in the working force the accident costs arising from medical bills and compensation have been greatly reduced. It is fair to say that had the accident rate of 1919 and 1920 continued, the cost for 1925 would have been double that of 1920. As a matter of fact the total costs were actually less and the cost per each payroll dollar in 1925 was less than one half that of 1920. These results were obtained only by the active cooperation of the division heads and others in charge of employes. Not every department, of course, was equally successful but most divisions showed at least some gain."

Safety work was begun in the Associated's sales department in 1924, Mr. Scofield said. The following tabulation was made of accidents:

Causes	No. of Accidents	Days Lost
Automobile Accidents		
1. Sprains and bruises	16	69
2. Cranking car	10	51
3. Inflating tires	2	45
4. Auto collisions	2	11
5. Radiator cap	5	0
6. Particle in eye	3	0
7. Auto doors	2	0
8. Miscellaneous	4	48
Other Accidents		
9. Handling drums	7	48
10. Falling against objects	4	29
11. Slipping and falling	3	77
12. Infection	4	52
13. Miscellaneous	2	35

Plan Safety Program

A SAFETY program was then laid out. It consisted of posters, educational bulletins, meetings, safety articles in the house organ, and the offer of prizes for greatest improvement. Improvement was shown in all classifications of accidents except auto cranking from which more accidents have happened this year making necessary the further stressing of proper gripping of the crank.

Among service station accidents have been the closing of doors on attendants' fingers. A flapper's dog snapped one attendant's face. Another dog snapped one attendant on the opposite side. He lost the seat of his trousers and several days' time.

Mr. Scofield said the Reno, Nev., distributing station and the San Pedro marine loading station had been awarded silver cups for excellent safety records. The Reno station has not had an accident since 1923.

Mr. Scofield in discussing the paper of R. H. Farrell, Standard Oil Co. of New York, on lowering the accident curve in the marketing division, which paper was published in the Oct. 27 issue of National Petroleum News, urged close cooperation between safety and medical departments of companies. He said eyesight of truck drivers should be tested periodically. Mr. Wallace suggested that lack of perspective probably was the cause of a great many automobile accidents and that eye tests should cover judgment of distances.

Mr. Currie told of the training of foremen in safety work by The Texas Co. In one class, begun last April, 148 foremen enrolled. In a questionnaire to these foremen asking why they enrolled, virtually all replied that they had done so that they might pass knowledge of safety work along to their men.

The course consisted of lectures lasting 30 to 40 minutes by members of The Texas Co. safety organization but from another plant than where the course was held, or by some outside safety expert. A general training class for foremen, to consist of 12 lectures, has been opened this fall by The Texas Co., Mr. Currie said. One of the lectures will be devoted to safety practices and first aid work.

F. L. Newcomb, Standard Oil Co. of New Jersey, read a paper on "Safety in Connection with Oil Refinery Processes" which was published in part in the Oct. 27 issue of National Petroleum News. A paper by Thomas W. Waddington, also of the Standard of New Jersey, dealing with safety methods in some Atlantic seaboard refineries, particularly with the Standard of New Jersey plants, will be published in a later issue.

Tells of California Fires

GEORGE F. PRUSSING, secretary of the safety board of the Union Oil Co., Los Angeles, vividly narrated the story of the crude oil fires that destroyed the San Luis Obispo and Stewart ank farms of the Union Oil Co. last April. Precautions against lightning which were about to be installed at California tank farms and reservoirs at the time of the fires, hav e since been installed. These precautions consist of radio towers and wire shields which tend to attract the lightning bolt from the steel tanks and reservoirs. This method was explained to the American Petroleum Institute at Los Angeles last January by F. W. Peek, Jr., General Electric Co.

The fire at San Luis Obispo which began April 7 was not the result of a direct hit by lightning but the reservoirs were probably ignited by an induced charge, Mr. Prussing said. There was a tremendous flash and the resultant concussion knocked out windows four miles away. Three of six reservoirs at the farm were ignited. Foam was placed on 19 steel tanks immediately and emergency workers threw up fire walls. The reservoirs burned quietly for several hours and the first boilover occurred 14 hours after the reservoirs were ignited. In the meantime rain which fell all the time, caused a frothing of the burning oil.

Boilovers Become Worse

INTENSITY of boilovers increased for three to four hours, Mr. Prussing said, the most severe one carrying the boiling oil in a wave seven feet high over the reservoir wall and at the rate of 40 miles an hour. This wave swept over dikes and destroyed the foam and pump houses. Five steel tanks were ignited in a few minutes and later others were ignited until only five tanks were saved of 19 steel tanks and six reservoirs at the farm.

One feature of the fire was the generation of tornadoes which swept from the fire area and wrecked houses. The only fatalities attributable to the fire were two ranchers who refused to leave their house when warned. The house was wrecked almost immediately and both men killed. An employe of the company fell dead of apoplexy while viewing the spectacle. Part of the roof of one reservoir was found 40 miles away, Mr. Prussing said. Gas clouds burned a mile high and were visible for 100 miles.

Tanks Saved at Brea

LIGHTNING from the same storm which swept down the coast ignited two reservoirs of the Stewart farm at Brea and a boilover engulfed a third, Mr. Prussing said. One boilover came within 80 feet of one steel tank. Although gas caused the roof of this tank to buckle the gas burned only from the vents. This fire was not nearly so serious as the one at San Luis Obispo. Motion pictures of both fires were shown.

Mr. Prussing said insurance on the oil was carried by 66 companies. The Union, he said, paid dollar for dollar all losses incurred by owners of property about its tank farms because although the company was not legally bound.

John Roach, deputy commissioner of labor of New Jersey, praised the companies having refineries in his state for the co-operation they have given the state in complying with state labor regulations and in installing safe equipment and teaching their employes safe practices.

Humble Plans Refinery In Panhandle

Staff Special—By Telegraph

HOUSTON, Nov. 1.—The Humble Oil & Refining Co. is planning to build a 10,000 barrel refinery in the Amarillo district. This became unofficially known today. The plans call for the construction of a combined skimming and cracking plant the exact location of which has not been made known.

It is understood the cracking units will be those of the Tube and Tank process developed by the Standard Oil Co. of New Jersey under the Ellis patent and used by that company. It is understood that the beginning of actual plant construction awaits only the ironing out of minor details which include decision of the location.

Construction of such a plant is a logical outlet for the Panhandle crude which is purchased by the Humble which has no trunk pipe line connection nearer to the Amarillo district than the Wichita Falls producing area.

Substitution to be Discussed At A.O.M.A. Convention Nov. 16

CHICAGO, Nov. 1

DISCUSSIONS on the evils of substitution, the motor fuel of the future and of the relation of refiner and marketer and jobber, with speeches by prominent oil men are on the program of the national convention and equipment exhibit of the American Oil Men's Association to be held at the Congress hotel here Nov. 16, 17, and 18.

Announcement was made today by James A. Gilmore, secretary of the association and in charge of the convention, that Dr. G. G. Brown, professor of chemical engineering at the University of Michigan, has accepted an invitation to speak on the motor fuel of the future, and that Glenn Griswold, editor of the Chicago Journal of Commerce has accepted the invitation to give an address on "The Truth About The Oil Industry."

With two weeks remaining, final touches are being put on the program and exhibitions. Approximately 35 exhibitors have taken space so far, Mr. Gilmore announced. All booths in the Gold room have been taken, and arrangements are being made for additional exhibition space in the Francis I room, the lobby to the Gold room.

The program will open with a discussion of the motor fuel of the future on the afternoon of the first day, Tuesday Nov. 16. Dr. G. G. Brown and F. B. Koontz, general superintendent of the Mid-Continent Petroleum Corp. refinery at Tulsa, will be the principal speakers. Other refinery representatives and jobbers will discuss the subject. Registration will be on the morning of the first day.

Address by Lovejoy

"BUILDING Business For The Honest Retailer by Overcoming Substitution" will be the subject of an address by Frank W. Lovejoy of the Vacuum Oil Co., New York, at the Wednesday morning session. Following the address there will be a general discussion from the floor on the substitution evil in an effort to determine whether the oil industry is giving too little or too much attention to this subject.

Judson C. Welliver, director of public relations of the American Petroleum Institute, will address the convention on "The Oil Industry's Contribution To The Nation's Wealth and Revenues" at the Wednesday afternoon meeting.

At the morning session of the closing day D. W. Moffitt, vice-president of the Mid-Continent Petroleum Corp., will discuss the refiner's relation to the jobber. C. C. Fredericks, president of the St. Louis Pump & Equipment Co., will talk on modern merchandising.

A discussion on what can be done to improve the relation of the refiner, marketer, and jobber will be held at the final session. Representatives from each branch will talk on the subject from his standpoint, and there will be general discussion from the floor.

Various entertainments are planned for the convention, the high spot being the informal banquet and dance on Wednesday evening, Nov. 17. Mr. Griswold will give his address on "The Truth About The Oil Industry" at the banquet. Sheldon Clark, vice-president of the Sinclair Refining Co., will introduce the speaker. A feature of the banquet will be the giving of a diamond ring to a lady and a diamond stick pin to a man. Plan of selecting the fortunate lady and gentleman will not be announced until the banquet. A. J. Callaghan, president of the American Oil Corp., and director of the association, is furnishing the ring and the association will give the stick pin.

A get-together luncheon will be held on the opening day at noon. Chicago oil men are planning an evening entertainment for the guests. Twice daily there will be an entertainment in the exhibition room, and various exhibitors are giving souvenirs.

Each session of the convention will be limited to two hours in order to give members an opportunity to look over the exhibits. Unfinished business at close of a session may be carried over to another meeting. Every topic and address will be open for discussion, and speakers will be prepared to answer any questions from the audience. The program has been arranged, Mr. Gilmore said, to hit some vital spot in every man's business and to drive home something of concrete value for him to think about.

Mr. Gilmore is in charge of the convention and has been arranging the various details. J. P. Howe, president of the Manhattan Oil Co., Kansas City, is president of the association.

All oil men attending the convention are urged by Mr. Gilmore to obtain certificates when purchasing railroad tickets to Chicago in order to take advantage of the fare and a half rate for the round trip. All railroads have granted the reduced rate.

Reservations for rooms at the Congress hotel are being made, and up to today 75 persons have sent in reservations, the hotel announced.

Henry McGraw Elected President Of Okla.-Kan. Producers

Staff Special

TULSA, Oct. 30.—Henry McGraw, vice president and general manager of the Gypsy Oil Co., was elected president of the Oklahoma-Kansas division of the Mid-Continent Oil & Gas Association at the annual meeting of the executive committee at Tulsa on Oct. 26. He succeeds W. C. Franklin, vice president of the Tidal Oil Co., who has served the association as president for two years.

The election of Mr. McGraw came as a recognition of his valuable service to the organization. He has been active in its affairs since its organzation in 1917.

Other officers elected were: Lee Scott, White Eagle Oil & Refining Co., Wichita, first vice president; A. M. Landon, Independence, vice president for Kansas; Wirt Franklin, Ardmore, vice president for southern Oklahoma; John H. Kane, Phillips Petroleum Co., Bartlesville, vice president for northern Oklahoma; and Harry H. Smith secretary and treasurer.

The following were chosen to represent the Oklahoma-Kansas division on the executive committee of the general Mid-Continent Oil & Gas Association which includes operators in Texas, Louisiana and Arkansas: Burdette Blue Indian Territory, Illuminating Oil Co., Bartlesville; Louis Campbell, Magnolia Petroleum Co., Oklahoma City; Frank Buttram, Oklahoma City; H. N. Cole, Pure Oil Co., Tulsa; Burt H. Collins, Echo Oil Co., Tulsa; William N. Davis, Bartlesville; J. C. Denton, Mid-Continent Petroleum Corp., Tulsa; A. L. Derby, Derby Oil Co., Wichita; W. W. Fleming, Mid-Kansas Oil & Gas Co., Tulsa; W. C. Franklin, Tidal Oil Co., Tulsa; Wirt Franklin, Ardmore; John S. Griffin, Sr.. Griffin Producing Co., Tulsa; J. H. Hill The Texas Co., Tulsa; John H. Kane, Phillips Petroleum Co., Bartlesville; Dana H. Kelsey, Prairie Oil & Gas Co., Independence; W. L. Kistler, Kistler Petroleum Co., Tulsa; A. M. Landon, Independence; John M. Lovejoy, Amerada Petroleum Corp., Tulsa; Henry McGraw, Gypsy Oil Co., Tulsa; R. A. Griffith, Sinclair Companies, Tulsa; John H. Markham, Jr., Tulsa; E. W. Marland, Marland Oil Co., Ponca City; P. M. Miskell Empire Refineries, Inc., Tulsa; E. H. Moore, Independent Oil & Gas Co., Tulsa; R. H. Bradford, El Dorado, Kan.; Waite Phillips, Tulsa; E. B. Reeser, Barnsdall Oil Co., Tulsa; G. S. Rollin, Roxana Petroleum Corp., Tulsa; Lee Scott, White Eagle Oil & Refining Co., Wichita; J. J. Shea Tulsa; W. G. Skelly, Skelly Oil Co., Tulsa; H. R. Straight, Empire Companies, Bartlesville; James A. Beasey, Carter Oil Co., Tulsa; P. G. Walker, Jr., Tulsa; W. E. Wood, Kingwood Oil Co., Okmulgee; C. J. Wrightsman, Wrightsman Oil Co., Tulsa; and Harry H. Smith, Mid-Continent Oil & Gas Association, Tulsa.

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

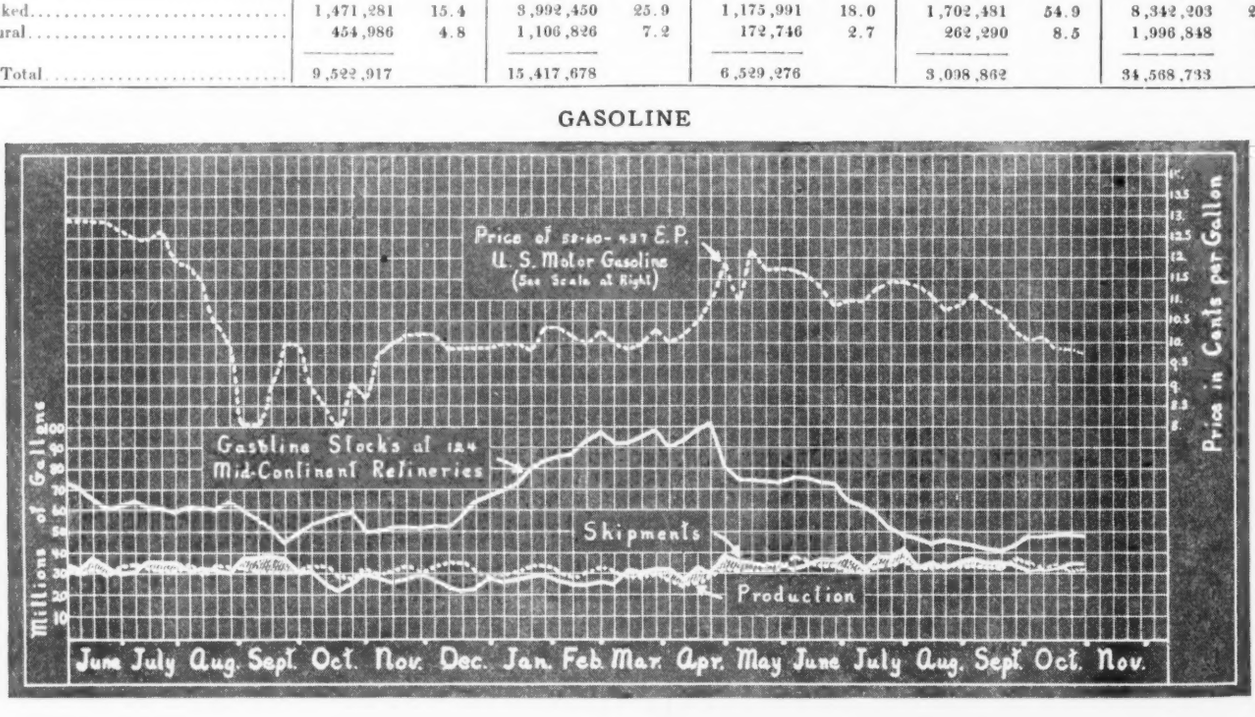
Mid-Continent Refinery Operations Week Ended Oct. 29 (By Telegraph)

	Kansas	Oklahoma	North and Cent. Texas	North La.-Ark.	Total Week Ended Oct. 29	Total Week Ended Oct. 1
Plants Reporting	23	46	41	14	124	124
Crude Cap. (Bbls.)	98,200	165,900	144,300	53,700	462,100	462,100
Cracking Capacity	21,000	45,800	15,750	20,200	102,750	102,750
Da. Av. Crude Runs	61,972 +14.0	107,193 — 5.1	60,541 — 5.8	47,781 + 5.9	277,487 + 0.3	291,520
Da. Av. Other Oils	9,021 — 4.3	—2,943	2,708 — 6.4	1,550 + 66.7	10,336 — 1.9	6,421
GASOLINE—Gallons						
Stocks Oct. 22	10,364,000	28,284,535	8,930,276	2,170,315	49,749,166	42,588,201
Prod. 10-22 to 10-29	9,522,917 + 4.9	15,417,678 + 0.1	6,529,276 — 2.4	3,098,862 + 0.5	34,568,733 + 0.9	35,711,822
Ship. 10-22 to 10-29	10,875,205 + 9.4	14,690,567 + 0.8	6,531,321 — 0.7	2,739,973 — 16.7	34,837,066 + 1.3	31,011,603
Stocks Oct. 29	9,011,752 —13.0	29,011,646 + 2.6	8,928,231 — 0.02	2,529,204 + 16.5	49,480,833 — 0.5	47,288,418
Ratio Sales to Prod	114.2%	95.3%	100.03%	88.4%	100.8%	86.8%
KEROSENE—Gallons						
Stocks Oct. 22	2,580,505	4,973,064	2,218,415	733,886	10,505,870	8,832,401
Prod. 10-22 to 10-29	1,794,131 +17.8	2,121,544 +25.6	1,551,634 + 22.3	741,336 + 36.4	6,208,645 +23.6	6,392,002
Ship. 10-22 to 10-29	1,403,007 — 8.4	2,305,928 +21.6	1,608,776 + 8.1	774,638 +112.6	6,092,349 + 1.4	5,425,307
Stocks Oct. 29	2,971,629 +15.2	4,788,680 — 3.7	2,161,273 — 2.6	700,584 — 4.5	10,622,166 + 1.1	9,799,156
Ratio Sales to Prod	78.2%	108.7%	103.7%	104.5%	98.1%	84.9%
STOVE DISTILLATE—Gallons						
Stocks Oct. 22	5,014,934	5,931,187	1,346,350	166,024	12,458,495	10,004,795
Prod. 10-22 to 10-29	941,153 —15.7	1,428,288 + 1.5	383,580 — 1.1	38,556 — 1.2	2,791,577 — 5.4	2,065,018
Ship. 10-22 to 10-29	621,964 + 9.9	555,626 +24.7	354,512 + 18.9	31,330 + 88.4	1,563,432 +17.9	2,066,696
Stocks Oct. 29	5,334,123 + 6.4	6,803,849 +14.7	1,375,418 + 2.2	173,250 + 4.4	13,686,640 + 9.9	10,003,117
Ratio Sales to Prod	66.1%	38.9%	92.4%	81.3%	56.0%	100.1%
GAS OIL—Gallons						
Stocks Oct. 22	8,036,520	30,676,882	12,630,297	4,016,596	55,360,295	56,097,888
Prod. 10-22 to 10-29	1,144,375 — 3.8	1,204,309 +37.0	1,134,863 — 21.7	2,629,486 + 10.1	6,113,033 + 3.5	9,460,138
Ship. 10-22 to 10-29	1,963,256 + 1.1	782,321 —30.4	868,607 +128.6	2,418,109 + 3.7	6,032,293 + 4.4	8,544,592
Stocks Oct. 29	7,217,639 —10.2	31,098,870 + 1.4	12,896,553 + 2.1	4,227,973 + 5.3	55,441,035 + 0.1	57,013,434
Ratio Sales to Prod	171.6%	65.0%	76.5%	92.0%	98.7%	90.3%
FUEL OIL—Gallons						
Stocks Oct. 22	12,782,527	68,453,431	14,908,222	9,353,317	105,497,497	106,402,196
Prod. 10-22 to 10-29	6,060,534 + 5.6	7,856,973 — 2.0	6,800,301 — 17.0	6,671,957 + 3.6	27,479,765 — 3.5	30,233,923
Ship. 10-22 to 10-29	5,150,004 — 9.6	6,491,841 —41.8	7,675,093 — 14.6	7,982,153 + 2.3	27,329,091 —18.8	27,237,324
Stocks Oct. 29	13,663,057 + 6.9	69,818,563 + 2.0	14,033,430 — 5.9	8,133,121 — 13.0	105,648,171 + 0.1	109,398,795
Ratio Sales to Prod	85.5%	82.6%	112.9%	118.0%	99.5%	90.1%

Gasoline Produced by Various Methods, Week Ended Oct. 29

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	La.-Ark.	% of Total	Total	% of Total
Straight Run	7,596,650	79.8	10,318,402	66.9	5,180,539	79.3	1,134,091	36.6	24,229,682	70.1
Cracked	1,471,281	15.4	3,992,450	25.9	1,175,991	18.0	1,702,481	54.9	8,342,203	24.1
Natural	454,986	4.8	1,106,826	7.2	172,746	2.7	262,290	8.5	1,996,848	5.8
Total	9,522,917		15,417,678		6,529,276		3,098,862		34,568,733	

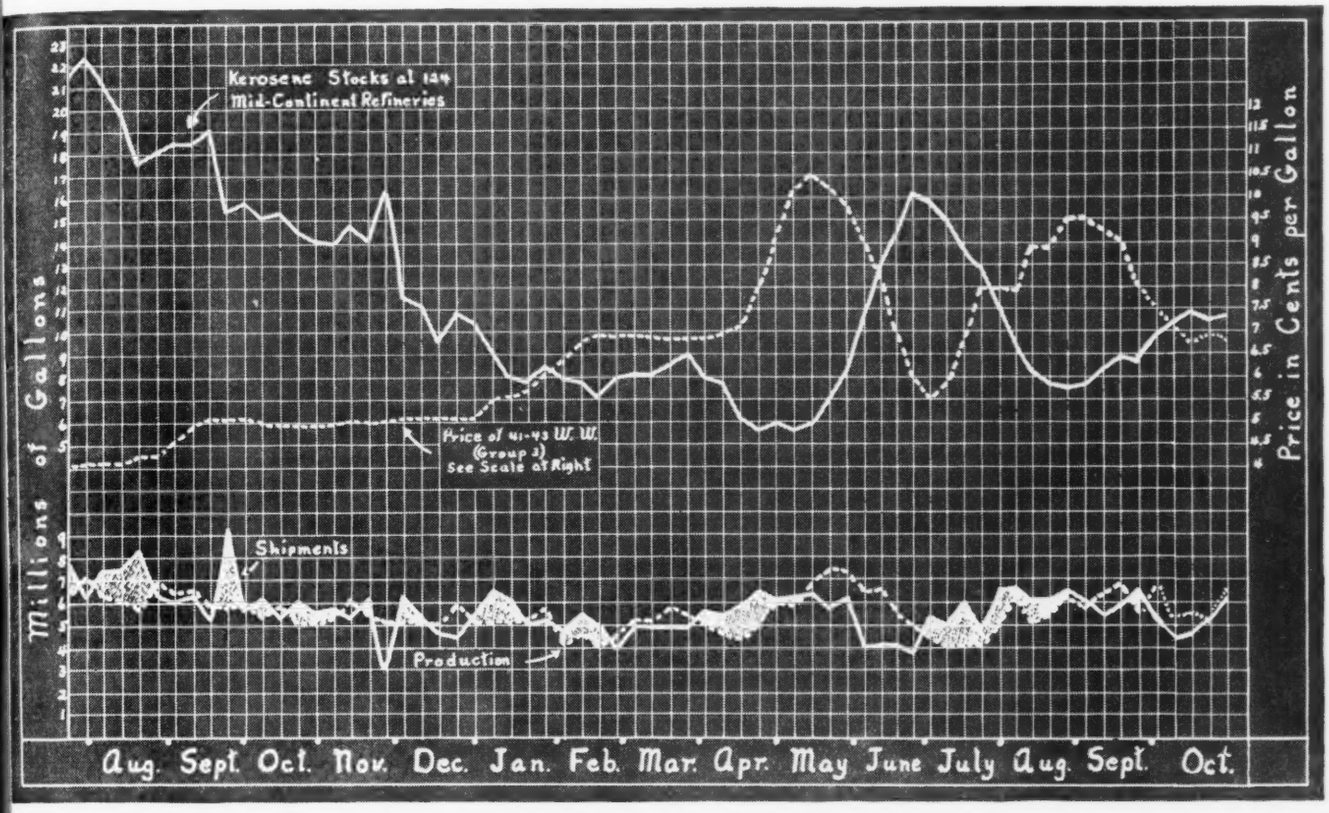
GASOLINE


Price of 58-60- 437 E.P. U. S. Motor Gasoline (See Scale at Right)
Gasoline Stocks at 124 Mid-Continent Refineries
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov.

Barometer of Mid-Continent Refinery Market— Week Ending Oct. 29

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 124 Plants to National Petroleum News

KEROSENE


Kerosene Stocks at 124 Mid-Continent Refineries
Price of 41-43 W. W. (Group 2) See Scale at Right
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct.

Gasoline & Kerosene Output & Demand Near Balance

Staff Special—By Telegraph

TULSA, Nov. 2

PRODUCTION and shipments of refined oils, except stove distillates, were near a balance at 124 Mid-Continent refineries in the week ended Oct. 29. These plants comprise 60 per cent of the operating capacity of the field.

Kansas refiners increased their crude charges 7600 barrels daily average to 61,972 barrels. Oklahoma refiners reduced their crude runs 5800 barrels per day to an average of 107,193 barrels. North Texas refineries decreased crude runs 3200 barrels daily average to 60,541 barrels. North Louisiana and Arkansas refiners reported an increase of 2600 barrels to a daily average of 47,781 barrels.

Shipments of gasoline from all plants increased nearly 500,000 gallons to 34,837,066 gallons and production of gasoline was increased approximately 300,000 gallons to 34,568,733 gallons. Stocks at all plants were reduced 260,000 gallons to 49,480,833 gallons. On Oct. 30, 1925, stocks at the same group of plants totaled 53,045,424 gallons.

Both production and shipment of kerosene increased sharply during the last week of October. Production was increased more than 1,000,000 gallons to 6,208,645 gallons and shipments 800,000 gallons to 6,092,349 gallons. Stocks at the end of the week amounted to 10,622,166 gallons, an increase of 100,000 gallons. Stocks of stove distillate continued to increase. At the end of the week reserves totaled 13,686,640 gallons, an increase of 1,200,000 gallons.

Shipments of fuel oil dropped back 6,000,000 gallons from the high record of the third week of October to a total of 27,329,091 gallons, while production was maintained at 27,497,765 gallons. Stocks on Oct. 29 amounted to 105,648,171 gallons, an increase of only 150,000 gallons. Gas oil shipments likewise were almost as great as production stocks, increasing only 80,000 gallons.

Postcards Boost Texas Jobbers' Meeting

CLEVELAND, Nov. 2.—Texas oil jobbers are being bombarded with postcards from the Texas Independent Oil Men's Association, on which are asked questions pertinent to the oil marketer's business. The cards are part of a publicity campaign in connection with the association's convention in San Antonio, Nov. 12 and 13. One card contains the question, "Would a uniform price law protect the small oil man in Texas from cutthroat competition?" This will be a topic discussed at the convention.

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Oct. 29. Change in stocks figured from Oct. 1.

Gasoline

	Gallons
Production	137,393,266
Shipments	135,200,851
Net change in stocks	+2,192,415
Ratio sales to production	98.4%

Kerosene

	Gallons
Production	21,806,249
Shipments	20,983,239
Net change in stocks	+823,010
Ratio sales to production	96.2%

Stove Distillates

	Gallons
Production	9,815,914
Shipments	6,132,391
Net change in stocks	+3,683,523
Ratio sales to production	62.5%

Gas Oil

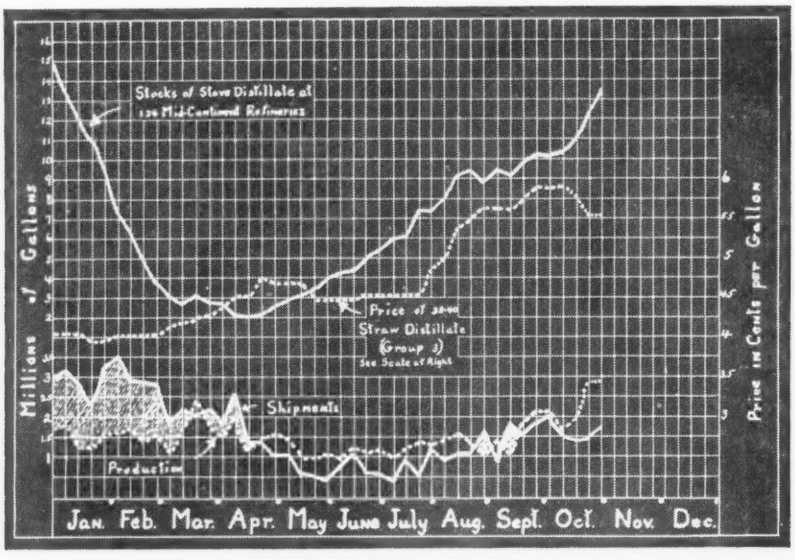
	Gallons
Production	23,334,719
Shipments	24,907,118
Net change in stocks	—1,572,399
Ratio sales to production	106.7%

Fuel Oil

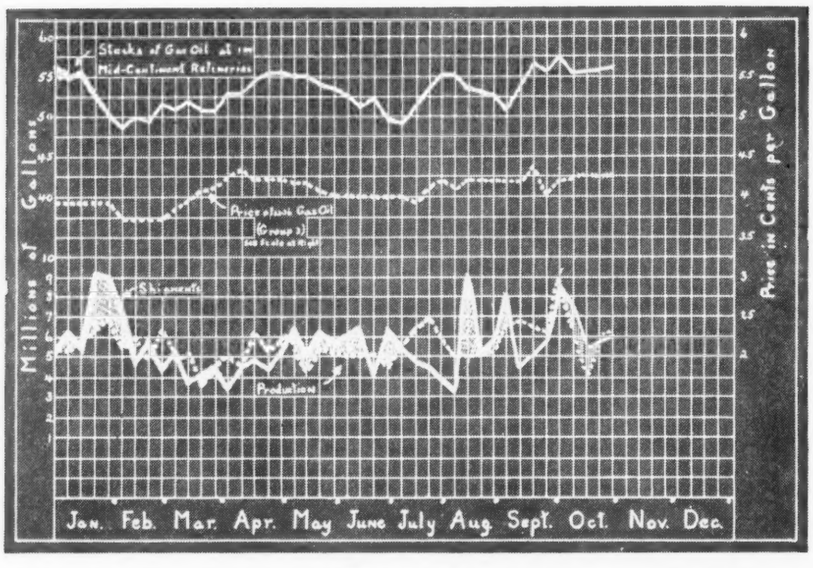
	Gallons
Production	115,847,833
Shipments	119,598,457
Net change in stocks	—3,750,624
Ratio sales to production	103.2%

Barometer of Mid-Continent Refining Market—Week Ending Oct 29.

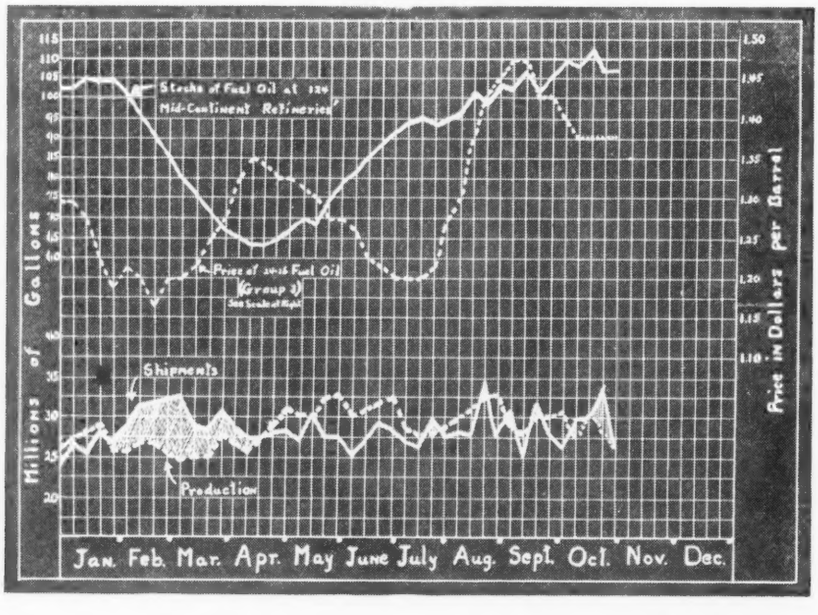
STOVE DISTILLATE


Stocks of Stove Distillate at 128 Mid-Continent Refineries
Price of 30-60 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

GAS OIL


Stocks of Gas Oil at 128 Mid-Continent Refineries
Price of 40 Gas Oil (Group 2) See Scale at Right
Shipments
Production
Millions of Gallons
Price in Cents per Gallon
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

FUEL OIL


Stocks of Fuel Oil at 128 Mid-Continent Refineries
Price of 24-28 Fuel Oil (Group 2) See Scale at Right
Shipments
Production
Millions of Gallons
Price in Dollars per Barrel
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

Crude in Storage Gains East of California

Staff Special by Telegraph

WASHINGTON, Nov. 3.—Crude oil production in this country increased in September, according to the Bureau of Mines report, by about 27,000 barrels daily average. There was a reduction of less than a million barrels in total crude stocks and of better than a million barrels in gasoline stocks. Changes in stocks of other products were small.

Total daily average crude output was 2,173,400 barrels in September, as compared with 2,146,000 barrels in August. Total crude stocks, including fuel oil in California, were 395,650,000 barrels as of Sept. 30. On Aug. 31 there were 396,341,000 barrels in storage. Stocks east of California Sept. 30 were 277,686,000 barrels, as against 276,448,000 barrels Aug. 31. East of California 1,238,000 barrels were added to stocks. In California stocks were 117,964,000 barrels at the end of September and 119,893,000 barrels at the end of August, the reduction here being 1,929,000 barrels.

Gasoline production in September was 24,834,000 barrels, a daily average of 827,800; in August 25,416,000 barrels, a daily average of 819,800. Stocks were reduced in September by 1,210,000 barrels to 33,341,000 barrels Sept. 30.

Gas and fuel output was 30,620,000 barrels in September and 31,056,000 barrels in August. Stocks were increased from 26,500,000 barrels Aug. 31 to 27,200,000 barrels Sept. 30.

Kerosene output was 5,191,000 barrels in September and 5,149,000 barrels in August. Stocks were reduced from 8,186,000 barrels Aug. 31 to 8,159,000 barrels Sept. 30.

Lubricating oil production was 2,645,000 barrels in September and 2,836,000 barrels in August. Stocks were reduced from 7,226,000 barrels in Aug. 31 to 7,149,000 barrels Sept. 30.

Oklahoma-Kansas Jobbers Plan Nov. 12 Meeting

Staff Special

TULSA, Nov. 1.—Jobbers of northeastern Oklahoma and southeastern Kansas will hold a joint meeting at Coffeyville, Kan., on Nov. 12. The meeting has been arranged through the joint efforts of J. A. Motter, secretary of the Kansas Oil Men's Association, and C. M. Kinney, assistant secretary of the Oklahoma Oil Jobbers Association.

Coffeyville jobbers and the Chamber of Commerce of that city are preparing entertainment for the visitors. There will be a luncheon at noon and a banquet in the evening followed by further entertainment. Secretaries of the two state organizations are preparing a program which will deal with current distributing problems.

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The durability of Wheaton Products—their rugged strength that stands almost impervious to time and wear—is the result of the *Quality* which is built into every Wheaton faucet, valve, joint, coupling, filler, nozzie and connection. And this *Quality*, for which Wheaton Products have long been famed, has enabled them to save money for the hundreds of Wheaton users—*and they'll save money for you!* Send for a sample of any Wheaton Product. Test it for 30 or 60 days, and, if it does not prove wholly satisfactory, you may return it for full credit or refund. Also, write today for illustrated catalog containing full information about all the Wheaton Products.

Type K Barrel Faucet

Type 60 Filling Pipe Cap

Single Swing Joint

Double Swing Joint

Tank Car Swivel Reducing Connection

Type A Tank Truck Faucet

Type B Tank Truck Faucet

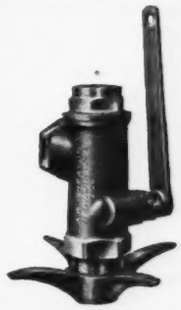
Type 24 Tank Truck Faucet

Anti-Freeze Valve

A. W. WHEATON BRASS WORKS
NEWARK, N. J.

Type 12 Gooseneck Open Hose Nozzle

Type 36 Quick Hose Coupling



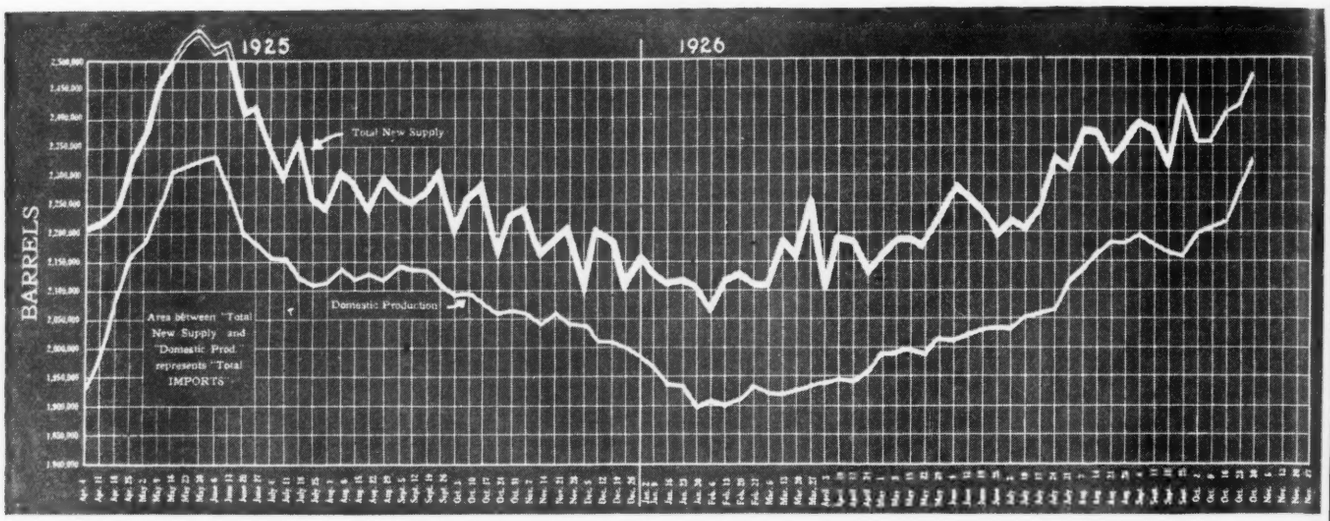
Type 25 Loading Valve

Type 50 Wet Hose Auto-Filling Faucet

Type 26 Loading Valve

Wheaton

Daily Average Crude Oil Production and Imports



Daily average gross crude output of United States, by fields, for week ending with dates given below, as compiled by American Petroleum Institute.

Production Summary

	Oct. 30	Oct. 23
Production east of the Rockies	1,702,950	1,667,350
Increase		35,600
Total production in U. S.	2,331,250	2,286,250
Increase		45,000
Crude Oil Imports	196,571	140,143
Increase		56,428
Total Crude Supply	2,527,821	2,426,393
Increase		101,428

OKLAHOMA

	Oct. 30	Oct. 23
North Braman	22,800	23,550
South Braman	6,300	6,450
Blackwell	3,850	3,850
Hubbard	2,700	2,600
Thomas	2,150	2,600
Tonkawa	35,100	35,230
Garber	23,750	24,650
Burbank	48,650	49,100
Osage, outside Burbank	34,200	34,300
Watchorn	3,900	3,950
Cushing	21,450	21,500
Yale Jennings	13,450	13,350
Davenport	5,600	5,650
Bristow-Slick	27,050	27,100
North Okmulgee	17,400	17,450
Lyons-Deaner	3,950	3,950
Stroud	1,900	2,000
Cromwell	14,850	15,150
Papoose	9,300	9,200
Wewoka	26,200	26,550
Duncan district	7,300	7,350
Graham	10,600	10,650
Fox	6,550	6,500
Healdton	14,750	14,950
Hewitt	10,950	11,150
Seminole	97,850	69,600
Others	66,750	66,900
Total Oklahoma	539,300	514,700
Increase		24,600

KANSAS

	Oct. 30	Oct. 23
Greenwood County	45,300	44,700
Florence-Covert	1,950	1,950
Peabody-Elbing	4,100	4,100
Eldorado-Towanda	13,650	13,700
Augusta-Fox-Bush	5,000	5,000
Rainbow Bend	3,300	3,400
Russell	4,400	4,500
Others	45,300	37,250
Total Kansas	114,750	114,600
Increase		150

NORTH LOUISIANA

Homer	5,500	5,550
Haynesville	9,100	9,100
Caddo, light	11,050	9,850
Caddo, heavy	4,050	4,450
De Soto, Red River	4,150	4,050
Elm Grove	550	550
Bellevue	2,100	2,100
Cotton Valley	7,450	7,550
Urania	15,500	15,250
Total North Louisiana	59,450	58,450
Increase		1,000

ARKANSAS

	Oct. 30	Oct.23
El Dorado	7,050	6,800
Smackover, light	13,900	13,800
Smackover, heavy	116,650	118,350
Stephens	1,550	1,550
Nevada	1,850	1,800
Lisbon	7,050	7,550
Total Arkansas	148,050	1SET
Decrease		1,800

NORTH TEXAS

Burkburnett	13,800	13,750
Electra	16,500	16,600
Iowa Park and K-M-A	3,950	3,800
Wilbarger	14,200	14,000
Hutchinson County	146,400	147,950
Balance Panhandle	13,200	14,000
Petrolia	700	700
Archer County	33,600	32,500
Montague	9,350	8,300
Others	900	850
Total North Texas	252,600	252,450
Increase		150

EAST CENTRAL TEXAS

Mexia	11,200	11,200
Currie	750	750
Richland	1,350	1,350
Corsicana-Powell	24,400	24,200
Wortham	6,200	6,000
Nigger Creek	14,600	11,800
Total East Cent. Texas	58,500	55,300
Increase		3,200

WEST CENTRAL TEXAS

Stephens County	10,800	10,700
Eastland County	5,500	5,450
Desdemona	1,800	1,700
Young County	7,350	7,100
Brown County	12,750	12,650
Palo Pinto County	400	400
Callahan County	4,100	4,100
Shackelford County	9,350	8,950
Reagan County	30,350	29,800
Mitchell County	3,700	3,700
Crane and Upton Counties	16,100	11,850
Coleman County	1,650	1,600
Others	2,850	2,800
Total West Cent. Tex.	106,700	100,800
Increase		5,900

SOUTHWEST TEXAS

Luling	20,300	20,450
Laredo District	16,150	16,250
Somerset	1,950	1,950
Lytton Springs	3,600	3,600
Piedras Pintas	50	50
Others	500	500
Total Southwest Texas	42,550	42,800
Decrease		250

GULF COAST

Goose Creek	7,300	7,450
Hull	21,250	22,700
Saratoga	1,250	1,250
Blue Ridge	2,000	1,850
Damon Mound	1,050	1,000
Batson	1,650	1,600
West Columbia	8,050	8,700
Humble	3,900	3,800
Pierce Junction	5,050	5,200
Sour Lake	5,100	7,900
Spindletop	86,400	82,900
Orange County	6,450	6,650
Edgerly	850	850
Evangeline	1,250	1,250
Vinton	5,800	5,800
Lockport	3,550	4,100
South Liberty	4,200	3,650
Big Creek	1,350	1,250
Boling	2,650	2,150
Others	2,000	1,950
Total Gulf Coast	171,100	172,000
Decrease		900

ROCKY MOUNTAIN

Wyoming

	Oct. 30	Oct. 23
Salt Creek	47,350	45,150
Grass Creek	3,100	3,100
Elk Basin	750	850
Big Muddy	3,300	3,200
Lost Soldier	5,350	5,150
Rock River	3,000	2,950
Hamilton Dome	....	....
Teapot Dome	1,000	1,050
Lance Creek	1,000	1,000
Others	2,200	2,200
Total Wyoming	67,050	64,650
Increase		2,400

Montana

Cat Creek	2,500	2,500
Sunburst	18,000	18,000
Others	250	250
Total Montana	20,750	20,750

Colorado

Moffat (Craig)	2,850	2,850
Fort Collins	3,400	3,450
Florence	550	450
Others	750	750
Total Colorado	7,550	7,500
Increase		50

New Mexico

Artesia	3,000	3,000
Hogback	800	700
Table Mesa	250	250
Rattlesnake	550	550
Total New Mexico	4,600	4,500
Increase		100
Total Rocky Mountain	99,950	97,400
Increase		2,550

California

Santa Fe Springs	47,500	47,500
Long Beach	95,000	95,000
Huntington Beach	68,000	60,000
Torrance	27,000	27,000
Dominguez	21,500	21,500
Rosecrans	14,000	14,000
Inglewood	40,000	41,000
Midway-Sunset	94,000	94,000
Ventura Avenue	52,300	49,900
Others	169,000	169,000
Total California	628,300	618,900
Increase		9,400

EASTERN

(Including Ill., Ind., Ky., Ohio, W. Va., Pa., and N. Y.	110,000	109,000
Increase		1,000

It Pays to Scrap Poor Bulk Station Equipment, Marketers Find

By Paul Truesdell
N. P. N. Staff Writer

CLEVELAND, Oct. 30 TANKS, pumps, with their motive power, and valves are undoubtedly the most important items in the equipment of a bulk station. Likewise, next to the human element, the dishonesty or carelessness of the man in charge, they are the greatest sources of possible loss. Hence it seems reasonable that to minimize losses, it is well worth while for a jobber to use the best available mechanical equipment in his stations.

It is easy to check the tightness of tanks, the efficiency of pumps and engines and the tightness of valves. It is very hard, sometimes, to check the honesty and faithfulness of the man in charge of the station. It has been found by men experienced in the construction and the marketing ends of many of the progressive companies that efficient, high-class mechanical equipment is one of the best answers to the problem of keeping men in charge of stations straight. More about that later.

So important from the economic standpoint is the matter of good equipment held by many men in charge of the building of stations and the marketing of products in both big and little companies that they are every day scrapping equipment that to the casual eye has many more years of service before it, and replacing it with the most modern and efficient—not usually the most expensive either—equipment they can buy.

It is always hard to throw away something that apparently will do well enough for some time to come but the facts and figures seem to back up the company executives who are doing that very thing.

Too Light Tanks Uneconomic

AS to tanks. Eight or 10 years ago, many tank manufacturers were building tanks even up to 40 feet high, the lower half three-sixteenths-inch steel and the upper half as light as nine sixty-fourths. Now few tanks above 15,000 gallon capacity are built of lighter than one-fourth inch plates.

It is these old, light tanks, dating back eight or ten years or even longer, that are finding their way to the scrap heap every day as the marketing companies become convinced of the economy of better tankage. And difference in cost between the flimsy tanks that were the rule years ago and the modern, heavy steel tank with forged steel flanges, manholes and so on, is surprisingly small.

One tank company, going back over its records, finds that the average price of a tank of 10,000 or 12,000-gallon capacity in 1909 was about $205 and gives the average price of a tank of the same size, of the best modern construction today as about $325 to $350. Comparative costs of tanks of other sizes are in proportion.

The marketing and engineering executives who are replacing the old time light tanks with heavier modern ones give the following reasons for doing it.

1—The plates—that is up to three-sixteenths—are so light that they cannot be well caulked. The caulking tool tends to spread out the sharp edge of the plate instead of peening it into the plate below.

2—The thin plates rust through quickly making innumerable pinhole leaks.

Of course, the leaking seams can be welded tight but this is an expensive operation. The pinhole leaks can be stopped with iron plugs but this is a continual performance and no sooner is one hole plugged than another or several others appear. The leaks caused by rust can be welded too, of course, but with a company with many stations, it would keep a welding crew on the jump all the time to keep the tanks tight.

And these innumerable leaks, while they might not constitute so heavy an item of loss to the jobber with only one such tank, would surely be the cause of considerable losses with a company that had several dozen or several hundred of them. For that reason, the men who study the business most closely both from the engineering and the sales end, the men who are responsible for making cheerful figures appear on the balance sheet, are replacing such tanks rapidly.

22 Leaks in One Tank

THE engineering head of one big company gave a concrete illustration to support his position that too light tanks are not a paying investment. This company is constantly busy replacing such storage with modern tanks. He had 10 or a dozen light tanks that had been ripped out from various stations and replaced, shipped to the company's shops, intending to have them repaired and buried for service station duty.

These tanks had been in service for varying periods up to 18 years. The report of the man who examined the tanks was that it would cost from $20 to $90 each to fix them up.

"And after they were fixed you wouldn't have real tanks. The rust would keep on eating through in other places," said the engineer. He gave orders to scrap them all. One of these tanks had 22 pinhole leaks, besides leaking seams.

On the other hand, this engineer said, the company has tanks in service, built of heavier plate, that have been on the job for 30 years and longer and are as serviceable as when they were new.

With pumps for bulk station use the possibility for losses is rather a matter of operating inefficiency than of inferior pumps. It is pretty hard nowadays to buy a poor pump. They have to be kept in good repair, of course, in order to deliver the best results but this is a surprisingly simple inexpensive matter.

The major use for a pump at the average bulk station, of course, is to unload tank cars. At some stations, loading of trucks is no less an important part of the pump's duty. However, at a great many stations, the trucks are loaded for the most part by gravity, the pump only being used when the gasoline or kerosene is low in the tank, if at all.

A great percentage of the bulk station pumps in the country are of the rotary type, the centrifugal, of course, being suitable where the layout of the station favors flooded suction and where tank cars are unloaded through the bottom outlet. Generally speaking, the centrifugal pump has very little suction, the fluid must be delivered to it. Most of them are direct connected either to gasoline engines or electric motors. Steam pumps are not used ex-

Don't Let 'Em Freeze

A big company mentioned in the accompanying article that uses gasoline engines almost entirely for operating unloading pumps at bulk stations, has adopted air-cooled engines. In bulk stations where there is no heating plant, which means most of them, the water boxes of water-cooled engines will freeze in the winter as the cooling systems of automobiles do. Air cooling prevents this.

cept at large stations because there is no steam plant available.

Most of the loss that occurs in pumping operations at bulk stations comes from having a size of pump too small for the job. The majority of bulk stations in the country are one-man stations. It is up to this man to solicit business, drive the tank truck that delivers the orders, and also unload the tank cars. In fact, he does everything about the station. But his main business from the company's standpoint, is to sell and deliver goods. He is not hired primarily as a pump operator. Selling goods is the only activity of his that brings actual dollars into the till.

More Time Pumping, Less Selling

SO the more time he has to spend in unloading tank cars, the less time he is out hustling for business and taking care of the customers.

As an illustration of this, a big marketing company with 500 or 600 stations had most of them equipped with gasoline engine driven rotary pumps with a capacity of 50 gallons a minute. Fifty gallons a minute is 3000 gallons an hour and the average tank car used by this company holds 10,000 gallons. Theoretically a station man should be able to unload a car with this pump in a little over three hours. Actually, however, with getting the engines started and fussing around with the details attendant on the operation, it was taking the man on an average of five or six hours to unload a car, sometimes longer.

A new executive came on the job. He was jarred to see the waste of time connected with this unloading of cars. With 600 station agents, if each wasted three or four hours only once a week, the dead time ran to impressive and shocking figures. And many of the agents had to unload two or three cars a week or more.

He found that aside from the actual loss of time, the station men had got into a peculiar frame of mind about unloading cars. Instead of saying to himself, "Well, there'll be a car in tomorrow. I'll get here early and pump 'er out and get out on the route by 9 o'clock," the mental process of the man was likely to be something like this, "Well, I guess I can't get out on the route tomorrow. There'll be a tank car in that I'll have to unload and by the time I get it pumped out the day will be pretty well shot."

In order to change this mental attitude as well as do away with unnecessary lost time this executive decided to throw out the small pumps and engines, notwithstanding they were in excellent condition, and install bigger pumps. This was done, and the cost of replacing the equipment was repaid in a short time.

The pumps he put in were of the same type, rotary, but they were of just double capacity, 100 gallons a minute, with gasoline engines (this company uses gasoline engines almost entirely) of the proper horsepower to operate them. With the new equipment, a tank car is unloaded in an hour and a half or two hours. The station man knows he cannot use as an alibi for getting out on his territory the fact that he had to unload a car.

This executive says that the upkeep of pumps is almost negligible. The buckets wear down so they fail to deliver their full capacity, maybe on an average once in two years. Then it is simply a matter of removing the head of the pump and putting in new buckets, a short and simple job.

Illustrating the low cost of upkeep of the pumps, one company that manufactures pumps used in thousands of bulk stations, gives the following actual figures from its books:

One oil marketer bought 412 pumps from this manufacturer between April, 1914 and October, 1926. The total cost of repairs on these pumps during that period was $1216, or an average of a little less than $3 per pump. Another oil company bought 306 pumps between March, 1916 and October, 1926. Total cost of repairs on these pumps to date is $428, or an average of about $1.35 per pump. Still another oil company bought 310 of these pumps between 1920 and 1926 and repairs on these cost $120.56 or considerably less than 50 cents per pump.

Undoubtedly there are other pump manufacturers who could show equally low upkeep cost for their equipment. The moral of this all seems to be that you don't need to worry much nowadays about getting a good pump. The point to be sure of is that you get one big enuogh to do the work efficiently.

As to the loss that can occur through delay in loading of tank trucks with pumps that are inefficient or are too small for their jobs, another pump manufacturer has this to say:

"The writer believes if the bulk station operator would take occasion to time the loading of his tank wagons once in a while, he would be surprised to learn how much time is lost through inefficient pumps. The cost of running the average tank wagon is probably not less than $20 a day and in most cases very much more than this, taking into consideration depreciation, etc. An extra hour or two a day means considerable loss in the loading operation and would pay for a new pump or repairs to an old one in a very short time."

It Pays to Buy the Best

WHEN it comes to buying valves for bulk stations, according to the marketing executive quoted above, there is only one proper policy and that is to buy the best. Purchasing agents are some times inclined to buy valves on price, but this kind of buying proves expensive in the end, according to this authority.

He states that several years ago, the company bought valves for bulk stations in the ordinary way on the assumption that a valve was a valve. Troubles from leaks were enormous. The company kept a crew of about 20 men continually busy, traveling from bulk station to bulk station, repairing valves. They ground the seats and they packed the glands over and over again and yet the valves would leak.

There came a time when the old valves were thrown out as rapidly as they became troublesome and replaced with nothing but the best grade of gate valves. The company has had very little trouble since.

"You can put a good valve in a line and then forget it," says this man. "It is very seldom that one fails. When once installed your worries about that particular valve are over."

He said also that a couple of years ago, the company, which is building bulk stations all the time, bought several hundred ordinary valves and put them in. The average life of these was one year. As soon as one began to leak, it was taken out and thrown on the scrap heap and replaced with a good one. "Never again," was this man's comment.

And yet, a good valve that will last practically forever, costs only $3 or $4 more for the 2½ or 3-inch size than an ordinary one, according to this man's estimate.

As was said at the beginning of this story, the greatest losses to be found at bulk stations, experienced marketing executives agree, comes from the dishonesty or carelessness of the men run-

Swing Lines in Small Tanks

One big marketing company has adopted the policy of putting swing lines in its gasoline and kerosene tanks at bulk stations, similar to the swing lines used on big crude storage tanks.

The operating engineer of the company points out two big advantages of the swing line.

First—It tends to prevent theft from the tanks. The swing line is raised and lowered by means of a chain running over a pulley. At night the line is hoisted above the surface of the gasoline and the chain locked with a padlock. The station agent has the key to the lock so if any gasoline is missing he is responsible, unless, of course, the lock is broken.

Second—If there is a leaky valve or a leak develops in the line, the swing line can be raised above the level of the liquid, shutting off the flow so the leak can be repaired.

ning them, the agents and tank wagon drivers. One favorite alibi for dishonest station men is that evaporation losses account for their shortages. Another is that the tanks are leaking, another is that the valves are leaking and another may be that the unloading pump is inefficient.

If all these pieces of equipment are in good condition, these alibis are gone. The men have to be up on their toes. It is easy to puncture the evaporation loss alibi when the loss at the coming of cold weather is balanced against the gain when the weather warms up. However, unless the equipment is in first class condition it is impossible to place the responsibility for shortages where they belong and pin the men down to their responsibility.

If a tank has a number of pinhole leaks and the agent in charge is short, he will tell you that these leaks are responsible for the shortage. And you cannot check him up. Neither the executive in charge nor anyone else can tell exactly how much gasoline or kerosene has leaked away through these tiny holes.

If a valve or faucet is dripping, he will blame his shortage on that fact. Nobody can tell how much has dripped away through that leaking valve. If he hasn't a pump of large capacity he can exaggerate its slow working and find an alibi to kill a lot of time. But when the tanks don't leak, and the valves don't drip and he has a pump of high capacity, then there is no alibi. Also, he has no temptation because he knows if he tries anything crooked he will be checked up at once. So he stays honest.

Then there is the matter of instilling into the men a feeling of respect for the company for which they work. If they see that the company keeps its property up in good shape, with top notch equipment, they are bound to have a feeling of pride which will lead them to do their part, through keeping everything about the place neat and orderly.

On the other hand, if they get the idea into their heads from the neglected condition of the equipment, it is more than likely that they will get the feeling, "The boss doesn't care how things go, why should I stretch myself to get more business and do more work?"

How To Keep Rotary Pumps Efficient

WE are unable to give you any exact figures as to the losses suffered by jobbers using old wornout pumps for unloadoing tank cars, but this no doubt runs into a surprisingly large figure. The ordinary type of pump used for unloading purposes usually leaks and it is from this source that the oil jobber suffers one of his greatest losses. A small leak in a pump which may not seem to amount to very much, when figured on the basis of a month or year, will run into a considerable amount of gasoline or oil. A leak of one drop per second, which we do not believe is excessive in some cases, especially when pumps are operating on pressure, would be one and three-quarter gallons every 24 hours.

Figuring 300 operating days in a year would mean an aggregate of 525 gallons lost through leakage. If a jobber had a battery of several pumps operating and if this loss was experienced on each of them, you can see that this would be an item worthy of much attention. This is one feature which we have overcome in our outfits and one on which we have laid particular emphasis in our advertising.

There are two or three places where wear usually occurs in a rotary pump and these are on the hub of the large driving gear and on the outside diameter of both gears. This wear when it occurs makes greater clearance between running parts with a corresponding loss due to slippage. The more slippage there is in a pump the less the efficiency and the more the capacity is reduced, requiring a greater length of time to unload a car with a corresponding loss of power.

The wearing of the rotor hub will permit of some end play in the pump causing it to lose its seal and this can readily be determined by taking hold of the driving shaft and seeing if there is any end play in it. In most cases it can be overcome by taking off the pump head and removing a thin gasket, allowing the pump to seal more closely. We have found in our experience with rotary pumps that one of the causes of wear is foreign substances getting into the pump. Dirt and grit as well as scale from the inside of pipe lines, bits of packing and gaskets and in some cases even small bolts and nuts and rivets from the inside of tanks have been found in pumps returned to us.

These articles when getting into the pump cause it to cut out very rapidly, increasing the clearance and the slippage and often times causing breakage. We invariably recommend the use of strainers on all suction lines and there is no doubt that the strainers will very quickly pay for themselves, through the saving in time and money lost in making repairs and replacements. The rotary pump is self-priming and will usually pull in the neighborhood of 28 inches of vacuum. From this it is readily understood that articles of considerable size can be picked up in the suction and carried into the pump. We believe that the subject of strainers is a very important one which the jobber should give careful consideration to when making installations.

The life which is to be expected from a pump is rather a hard thing to determine as this is controlled by the kind of service it is in, whether it is continuous or intermittent, the nature of the liquid pumped and the operating conditions. We have in mind some of our outfits which have been in service for 12 years and which are still operating satisfactorily. If a pump is kept free from foreign matter, lubricated properly and adapted to the service for which it is used, we believe it will last indefinitely, providing, of course, that the construction and the operating principle of the pump is correct. Most rotary pumps employ but two moving parts and these parts are self-supporting, eliminating excessive wear from friction and eliminating any danger from sparks caused by contacting material.

All parts for most rotary pumps are interchangeable and it is possible for the customer to put in the necessary repairs in the field. However, if it is possible, we suggest that the customer remove the pump only from the base and return to us for inspection and repair. There are only two parts which ordinarily need replacing in our pump and these can be installed quickly by inexperienced and unskilled labor.

However, if the customer desires to return the pumps to us, we go over them very carefully, putting in the new parts and charging only for the parts used. We believe this is advisable for as manufacturers, we are in a

Advice From an Authority

The accompanying article was written by an executive of a company manufacturing rotary pumps which are much used at bulk stations. National Petroleum News asked this company for definite information from its engineers which would be useful to the jobber in showing him how to keep his pump equipment in efficient condition. The statements we believe, are well worth the study of every man charged with maintaining pump efficiency.—Editor.

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position to know exactly what the pump will require and also the work is done by experienced workmen who have the facilities to do a first class overhaul job.

In some cases we have found that a customer will attempt to repair a pump and will get it together wrong so that it does not operate. In some cases they will remove the gaskets which were furnished with the pump and put on heavier gaskets allowing end play and thereby cutting down the pump suction. This is one trouble which we have found frequently and in no case do we recommend using heavier gaskets, than those originally furnished with the pump.

We will list a few things which we try to get every customer to follow out carefully in making an installation:

In a pump installation it is much better to have too much power than too little. We have found in lots of cases an operator will desire to use a pump which has been used for unloading gasoline or kerosene, for the handling of oil, and the horsepower of the motor or engine will not be sufficient to handle heavier liquids. Also, in handling oils, it is well to allow some excess horse power because during the winter months, due to the lower temperature of the oil it is much more difficult to handle. A good plan to follow is to specify the exact nature of the service the pump is going to be used for and let the pump manufacturers recommend the horse power to be used.

Suction Line

IN the handling of kerosene or gasoline, suction lines of the same size as the pump opening are satisfactory in practically all cases, except where the suction line is very long. We then recommend the using of the next larger size of pipe, cutting down the loss due to the friction in the pipe line and thereby reducing the power consumption, especially in the handling of fuel oils and the more viscous liquids, we recommend the using of a larger pipe line especially on the suction. Take for example our 2-inch pump which has a capacity of 90 gallons per minute at 390 revolutions. In handling gasoline or kerosene a 2-inch line would be sufficient, but in handling oil which is heavier, it would be much better to put in a 2½-inch line.

Leaks in Pipe Line

A LEAK in the suction line of a pump will cut down the efficiency considerably and we recommend using shellac or some other sealing compound on all connections and joints. In some cases we have found that the universal joint of an unloading rack has not been taken care of properly, allowing the threads to become jammed or otherwise damaged and the joints do not close tightly. This, of course, cuts down the capacity of the pump.

Strainers

The installation of strainers is very important and should be given careful consideration. They will quickly pay for themselves through the saving in repairs and replacements.

Relief Valves

IF there is any chance that the discharge line may be shut off while the unit is operating, relief valves should be installed to prevent injury to the pump or perhaps the burning out of the motor. This is especially important where rotary pumps are used and where the delivery is positive.

Hot Water Cheaper In Chicago Than Air

CHICAGO, Oct. 30.—In order to save compressed air at a Chicago service station where a great deal of car cleaning is done, the management has ceased to use it for cleaning motors. One accepted method of cleaning automobile engines is with a kerosene spray under pressure, but this man has found a cheaper way.

The car washer saturates a rag in kerosene and thoroughly "sops it over" the motor, applying more oil at the dirty looking spots than where the motor looks cleaner. Then he leaves it a few moments to soak. When it has soaked a while, he applies hot water in a driving stream under steam of pump pressure and washes the motor clean.

Having softened the dirt with kerosene and washed it off with high-pressure water, the motor is left wet. And not until then is air applied. It is used sparingly and for a short time only to dry the motor and preclude the possibility of rust in hidden places or moisture in the coils.

This has proven an economy in Chicago. Operators might not find it so cheap elsewhere. Water rates in Chicago are about half what they are in inland towns, or possibly less.

Oil Man Heads Asphalt Conference

NEW YORK, Oct. 29.—The fifth annual asphalt paving conference will be held at the Mayflower Hotel, Washington, D. C., on Nov. 8 to 12.

C. G. Sheffield, who is president of The Asphalt Association, and manager of the fuel oil department of the Standard Oil Co. of New Jersey, will act as chairman of the first session Nov. 9.

A specially conducted excursion to the races at the Pimlico racetrack near Baltimore has been arranged by the Standard Oil Co. of New Jersey, which will act as host. A section of the grandstand will be reserved for the party.

Mr. Sheffield was added to the marketing committee of the Standard on July 1, which made him one of the six joint sales managers of the domestic sales department.

Colonial style steel building, used by Pure Oil Co., and pump shelter. Some stucco was used in this station and the interior was plastered. The roof is of steel shaped to resemble Spanish tile. The station is painted white with blue trim. The roof also is painted blue.

Steel May Solve Temporary Site Problem

By Roger B. Stafford
N. P. N. Staff Writer

CLEVELAND, Oct. 30

"WE have a five-year lease on a good corner on which we intend to build a service station," said a middle western oil man recently. "We wish to put up a neat, attractive station but on account of the short term of our lease which we know the owner of the lot will not renew because he is considering putting up a business block, we are somewhat puzzled about the type of building we can erect there and not lose money."

The problem of this man is like that of probably several hundred others. They have tracts under lease for short terms. They want to make the most profit possible out of a service station during the time the land is in their possession and to get the greatest salvage when their lease expires.

Were they assured of a great volume of trade throughout the term of the lease they might be warranted in putting up a station of what is usually described as a permanent type. But it is necessary to spread the cost of a permanent type structure over a term of years, and this term may be longer than the term of a lease. To raze such a station at the expiration of a short term lease might mean the wiping out of all profits derived from the sale of gasoline, oils and greases.

Need for Low Cost

IT, therefore, is necessary for the oil marketer to look about for less expensive structures or station buildings which may be salvaged and possibly used elsewhere.

There are several types of buildings which may be used for a short term of years and which do not cost a great deal. But not all of these have a high salvage value. A plain wooden structure is not expensive but it is not very attractive. To get attractive effects with wood, it is necessary to have some cabinet work or paneling which is costly. Stucco lends itself to moderate priced construction but it has no salvage value. It must be destroyed when the station is dismantled. Probably only the frame can be saved.

There are numerous makes of all steel buildings on the market that may be salvaged almost entirely. Only the foundation and floor cannot be saved.

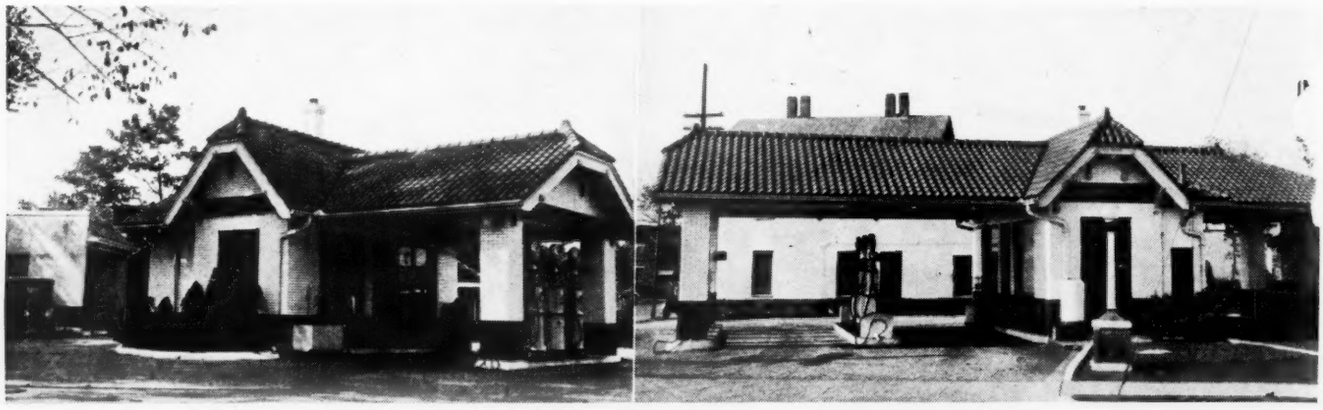
Neat station of Pan American Petroleum Co. in California of a style that is well adapted to steel construction.

Fabricated steel buildings can be had in almost any style—plain or ornate. Prices vary from less than $500 a station to around $2000 for fairly large stations.

"They are not only economical in price, but also economical on account of the fact that the buyer is ready to go ahead and do business in them as soon as they are put up on its foundation, and does not have to go to the expense and delay usually caused by applying stucco and plaster," said T. R. Chunn, Edwards Manufacturing Co., Cincinnati, recently in discussing steel buildings for service stations. "These buildings are all bolted together and for that reason can be taken down and moved to another site at any time with 100 per cent salvage."

Many large oil companies have bought fabricated steel service stations from the Edwards company, the Arthur B. Shepard Corp., Newark, N. J., and the Union Metal Manufacturing Co., Canton, O., not only for use on temporary sites but also for erection on sites owned in fee. Many are used to replace mere shacks set up to give a location a test.

These buildings have ranged from the often condemned "tin sheds" such have been used by some of the largest and most successful distributing companies to dignified structures like the one illustrated at the head of this article, in which some stucco is used on the outside on metal lath, and plaster



Permanent type of stations built in Dayton, O., by Gerkins Oil Co. These stations have same general appearance but differ widely in dimensions. One on left has single drive canopy. One on right has double drive canopy on one side and canopy on opposite side covering two drain pits. Materials and style of roof tie one station with the other.

on the inside. The manufacturer lists this type of station at slightly more than $1,000 exclusive of the pump shelter which costs around $250.

Many Shapes Available

ALL steel service stations in attractive stock designs may be had in styles with single or double canopies, on one or two sides. The stations may be square, rectangular, round, hexagonal, or octagonal. Special shapes may be made for a distributor who wishes to standardize on a certain type in order to give individuality to his marketing system.

Fabricated all steel buildings are also to be had for bulk plants where portability and expense are determining factors. There are buildings for garages and warehouses. Also there are multiple garages with steel partitions which may be put up on a large service station site if the station is in a neighborhood where garages may be rented to help carry the overhead of the station.

But where an oil distributor wishes to build a service station on a lot which it owns or on which it has a long term lease, the choice is limitless.

It is the policy of many successful distributors to have their stations uniform in any city or motoring community. The fabricated building or any number of different materials may be used. There are wood, stucco, tile, brick and stone to pick from, any of which may be worked into attractive designs. Combinations of these may also be used and are being used by many distributors.

Uniformity is a point aimed at by many distributors in planning their station buildings. But uniformity does not necessarily mean that each station must have the same dimensions as another. Material and general appearance may work for uniformity and the size of the station may be altered to fit the site.

The latter scheme has been successfully employed by the Gerkins Oil Co. at Dayton, O., for instance. This company has stations on all sorts of lots and has designed each station for each particular lot. But the motorists of Dayton do not mistake a Gerkins station. With one exception the same material is used in building them. The high foundations are of red tapestry brick, the upper part of the building and columns that support the canopies are of white tile which may be washed when dirty, and the roofs are of red Spanish tile.

The exception noted is a station built on railroad owned property. In it white stucco was used instead of the more expensive white tile.

But all of the Gerkins stations are strikingly tied together by the use of the same kind of material. With the one exception, all are built on company-owned ground so permanency was permissible. But on the temporary site such handsome structures might not be able to pan out before removal would be necessary. It is there that the steel station has a definite and unassailable function if uniformity and attractiveness are sought.

Air Pumps Can Deliver 40 Gals. A Minute

CHICAGO, Oct. 28—Oil men considering the expense incidental to air operated gasoline dispensing pumps are accustomed to figure that air at a pressure not more than 30 pounds per square inch will be expended gallon for gallon with the gasoline sold. Ordinarily this is a safe way to figure it. However, there are gasoline pumps on the market that use a great deal more air than that.

One pump manufacturer has a rapid, air driven, piston type pump on the market that expends air at 100 pounds pressure, gallon for gallon with the gasoline. The pump can be made to discharge 35 or 40 gallons per minute, and a five-gallon fill of gasoline uses as much air as a 32x3 tire. This machine is not usually considered a service station pump.

Such dispensing pumps have been installed mostly in garages of large trucking companies. Accuracy of measurement per truck is not so much the object as to get all tanks full the quickest way possible. Truck tanks usually are filled at the garage between 4 and 5 o'clock in the afternoon, and time saving is the object. Naturally the truck garage is equipped with plenty of high-pressure air for tires any way.

Little Losses Of Air Cost Money

CHICAGO, Oct. 28—Service station operators who have installed automobile Rotary Lifts or other types of greasing racks manipulated by air, have a chance to economize on air in a way that the average unlearned greasing hand will not observe unless he is trained. The important rule is:

Cut off the air as soon as the lift has reached the desired height with the machine on it.

There is no automatic cut-off valve on pneumatic lifts. Such things are not practical and would not be unless all cars were the same weight. A light open roadster might be lifted full height with a pressure of 35 pounds while a big truck of some sort might require a full 100 pounds pressure. If there were a pressure gauge it would have to be adjusted for every car, which would be more trouble than simply cutting off the air when the lift is high enough.

If a greasing hand has a light machine on the rack, turns on the air pressure and neglects to cut it off immediately it reaches the top, the compressed air keeps coming into the cylinder. If left open a few minutes the air in the cylinder of the lift will be the same pressure as that in the air storage tank; 150 or maybe 200 pounds. The Rotary Lift will not be injured by it but the pressure is not necessary and the air costs money. The expensive air is lost when the customer's car is let down.

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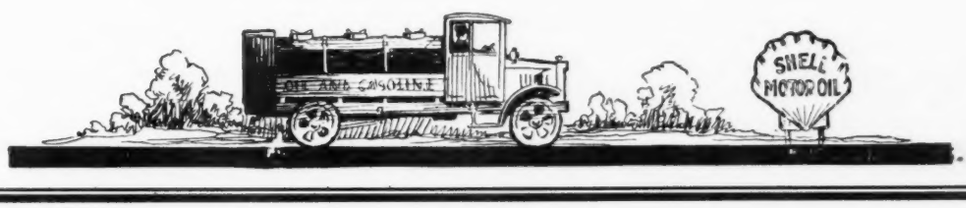


Air Compressor Needs at Modern Station Must be Given Careful Thought

By Ward K. Halbert
N. P. N. Staff Writer

CHICAGO, Nov. 1

COMPRESSED air has been adapted to such a variety of uses around filling stations in the last two or three years that the volume required has greatly increased. In some instances it has more than doubled. This has happened in a great many cases without much thought about the added burden upon the air compressor. Nevertheless, that burden has been felt and the station owner has paid the bill, one way or another, mostly to some electric light and power company.

There was a time when compressed air at a filling station was kept on hand only to inflate pneumatic tires. Now the tire proposition is one of a half-dozen air requirements. By the way, it is one of the smaller demands upon the compressor in these days of air-operated gasoline dispensing pumps, air-operated grease racks and motor cleaning equipment. And with all this, air operated lubricating oil pumps and grease guns come in for their part.

Overload Shortens Life

WHEN a station operator installs air-operated equipment requiring air in excess of the rated capacity of the compressor on hand, it is time to begin thinking about a new compressor. He may not be obliged to have one for a few days, or even a few months, nevertheless the change is coming because an overworked compressor like an overworked horse, has its life of usefulness shortened. And in the case of the compressor, it is unusually expensive to operate under heavy overload.

As pointed out by one engineer, compressor expense may be classified four ways, (1) initial cost, (2) premature replacement or wear, (3) electric current consumed, and (4) care.

It is possible for any buyer to economize on the initial cost, but in view of the number of new service devices that use air and their growing popularity, most compressor companies are urgently recommending bigger and better compressors to be used in replacement. It is true that with sufficient care a small compressor can be made to last longer and do better work than if it is neglected, but the same is true of the biggest and best machines made, and no amount of care will make a machine equal to a job for which it was never designed.

The question of wear is of great importance. In the first place, no hard speed, air-cooled compressor was ever meant for continuous service. Compressors designed especially for service station duty are all air cooled. By their very nature they do their poorest work when warm. So if an air compressor has too much work to do it operates too long at a time with the result that it runs hot and besides damaging itself does not deliver the amount of air it should. Thus laboring under an improper burden it runs unnecessary hours and consumes unnecessary electric current that costs real money.

Much the same thing happens when a compressor designed to build up a pressure of 125 pounds is re-adjusted to shut off at 150 pounds or higher. Several times during the business day it is made to strain upward to a peak load beyond its rated strength. Approaching such peaks, a compressor will labor, consume too much electricity, get hot, become inefficient and do damage to itself.

The selection of an air compressor for a filling station, in view of present drastic requirements, is a hard engineering proposition and every station is a special problem. Nearly all of the newer uses of air, such as the Rotary Lift, motor oil dispensing pumps, engine cleaning devices, etc., while not requiring excessively high pressures do use great volumes of air at pressures under 100 pounds. This means that the compressor of today must be able to deliver a great deal more air per minute than the one of five or six years ago when air was needed only for tires.

The fact remains, however, that filling stations still have to serve tires and certain tires are in use that demand high pressures. Inter-city buses and freight trucks carry high air pressure in their tires. State laws or highway department rulings in many states will not permit the use of solid tired trucks on paved roads. The weight of these big machines makes it necessary that they have big tires. The rule applying to pneumatic tires in large sizes is "20 pounds pressure per inch in diameter."

Takes Lots of Air

FOR a time certain trucks were equipped with 10-inch tires which meant that they would carry 200 pounds of air pressure and carried 175 pounds in actual practice. The 10-inch tire has been discontinued largely but there are plenty of 8-inch pneumatics still in use and they will take 160 pounds maximum and operate carrying pressures up to 140 pounds. It is obvious that such a truck would have a hard time getting serviced at a station whose air storage tank never carried more than 150 pounds. For 175 or 200 pounds are needed in the air tank in order to build up 140 pounds tire pressure with any degree of speed.

Except for the big buses and trucks operating on paved highways, pressure requirements for tires are lower now than they have ever been before. If it were not for the big tires the filling station operator could concern himself with getting more air and getting it faster, and forget about high pressures. These big trucks can not be neglected however. They are desirable customers. They operate long hours; they consume much gasoline per mile; their lube oil requirements are considerable and they have big tanks and are easily serviced. No jobber who wants this good business is going to be caught "just out" when the trucks want air.

Requirements Are Varied

NINETY per cent of some oil stations' requirements, nowadays, is for low pressure air, that is to say less than 100 pounds. Air operated gasoline dispensing pumps do not usually require more than 20 pounds of air on the gasoline feed tank. Air operated motor oil dispensing pumps sometimes require rather high pressures but even in winter the most viscous oil can be delivered with about 40 pounds on the tank. A Rotary Lift will raise a heavy truck to the required height with 100 pounds. And air used to sweep out the inside of automobiles, clean the upholstery and the motor is never stored at a pressure in excess of 100 pounds. Moreover, the popularity of balloon tires means that most tires need less than 40 pounds.

Compressor men say that if one service station had a Rotary Lift, an Auto Laundry, air operated gasoline pumps and air stands for tires, and on top of that was called upon to serve trucks and buses, it would pay the owner of that station to have two separate air systems. One large fast operating compressor would be necessary to provide large storage of low-pressure air and a smaller outfit of the "two-stage" type

to store up a limited amount of high pressure air for big tires.

Of course, such a filling station as that would be one of the wonders of the industry. Any oil jobber would try to arrange to service the buses at some station apart from all the other machines that are such heavy consumers of air. Moreover, the reason for doing so would be sound from an engineering standpoint. When an air storage tank requires 200 pounds pressure, the compressor has to work harder to achieve the last 50 pounds than it does to get the first 100. So if 100 pounds is enough for nine-tenths of the air used it is extravagance to maintain such a volume of air at twice the pressure.

Two Stage Compressors

THE most popular air compressors on the market today for general service station requirements are the "two stage" compressors. They are made by all manufacturers of air equipment. Their principle is a simple one. They have two cylinders, one big one and one little one. The air is drawn first into the larger cylinder and reduced by pressure to 50 or 25 per cent of its volume. From there it is transferred to the smaller cylinder and compressed further.

Their chief characteristics are that they operate more slowly and therefore keep cooler; having two cylinders they run more smoothly and make less noise. They achieve higher pressures but naturally do not deliver the air as rapidly as some machines of about the same horsepower of the single stage type. Single-stage and two-stage compressors are not to be compared for desirability. They are made for different purposes and each is best for its own job.

As far as initial cost is concerned, nearly all inexpensive compressors are single-stage. Nevertheless, some of the finest and most expensive ones are single-stage also. One or more manufacturers are offering the trade two-cylinder single-stage compressors. This is done to effect smoothness of operation, slower speed and larger volume of displacement of low pressure air.

Prepare for Peaks

EVERY station is an individual problem. Before installing a compressor, the manufacturer must know a great deal about what will be required of it. If air requirements are small and the station owner expects them to stay small then a small compressor is sufficient and the station operator may be correct in economizing on the initial investment. But if he expects to put in a Rotary Lift, air operated pumps or motor cleaning equipment in a year or two it may be more economical to provide a larger compressor in the first place.

A big compressor can do a small job with minimum work. If it gets the right kind of care the depreciation is slow. It consumes electricity only when it is working so the expense for current will be light because it will automatically

KEEPING UP WITH THE TIMES

THERE has been a great deal said during the past six months in newspaper advertising and otherwise, about Anti-Knock, or Anti-Detonating Motor Fuel; in fact, so much that the average automobile owner does not know what to believe and what not to believe. The Derby Oil & Refining Corporation is THE PIONEER in the Mid-Continent Field to recognize the superior qualities and Anti-Knock values of Straight Cracked Gasoline as an improved Motor Fuel, and to market a Straight, unblended Cracked Gasoline.

This grade of Motor Fuel was marketed through Derby Oil Company Stations and its Independent Jobbers throughout its marketing territories for a period of One Year before being placed on the market by competitive companies in the same territory, and met with marked success.

We manufacture Straight Cracked Gasoline in two grades; 437° and 400° End Points, or better. Since we keep our Cracked Gasoline separate, we also market straight, Straight Run Gasoline in 437° and 375° End Points, or better. Shipments can be made in 4,000, 5,000, 6,000 and 8,000 gallon Tank Cars. Also in compartment cars of 2- 4,000 gallon and 2- 3,000 gallon compartments each.

We also compound our own line of Motor Oils & Greases. These are scientifically manufactured from the very best stocks that can be purchased in Texas, Pennsylvania, and Mid-Continent Fields, and made to specifications recommended by the Society of Automotive Engineers.

Because of our progressiveness, Jobbers can place entire confidence in Derby Gasoline and Derby Motor Oils.

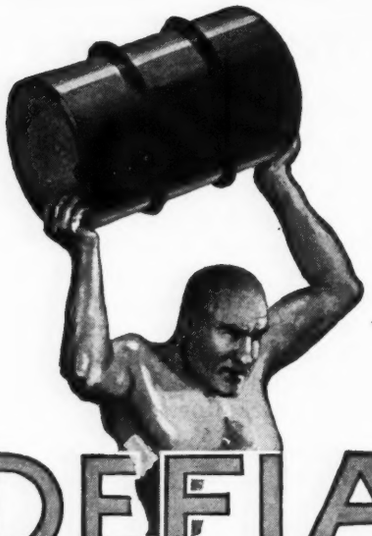
This Company is always endeavoring to keep up with the times and will spare no expense to do so. When better Gasoline and Lubricating Oils are made, you will find our Company still THE PIONEER.

Derby Products can still be had on all the main highways in Kansas, Missouri, Iowa and Nebraska, as well as some of the principal highways in Oklahoma, Illinois,, Minnesota, Wisconsin and Colorado. We own no service stations and market our entire output through independent jobbers. We sell to jobbers—not in competition to them.

The Derby Oil & Refining Corporation

Wichita, Kansas

Local Telephone, M-2148 Long Distance, LD-177



"DEFIANCE"

STANDARD

There is but one grade of Defiance Steel Barrels. The difference in price is governed only by the size, style or external design.

There is a uniformity of manufacture that is standard, too. Defiance Barrels are *all* good barrels. Every barrel in a shipment can be depended on.

A Defiance Steel Barrel is an accepted standard in barrel buying.

THE AMERICAN STEEL PACKAGE CO.

Defiance, Ohio

"Kwik-Flo"
"Fast-Flo"
"Max-Flo"

FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!
FAUCETS!

"Push-Pul"
"Skrew"
"Rench"

STEEL DRUM ACCESSORIES CORP.

BUFFALO, NEW YORK

do its work with less effort than a smaller machine.

There are times when a jobber does not need a new compressor so much as he needs an extra tank. A few months ago a certain station was equipped with an air compressor to meet maximum tire requirements. More recently the oil man installed a Rotary Lift for greasing service on the lot and hooked up to the same air tank. The drum of the lift holds 25 gallons and demands 40 to 100 pounds pressure, depending on the weight of the automobile being lifted. The compressor did its work well, carrying the extra burden without getting hot except on Saturday.

Every Saturday greasing business was good. The "Lift" turned out 20 jobs or more. The compressor labored almost incessantly. The hotter it got the less air it pumped and sometimes when the greasing business was rushing the Rotary Lift refused to lift. The customer had to wait for the hot little compressor to deliver the air. The station attendant reported trouble and service was demanded from the Rotary Lift people. "There is nothing wrong with the compressor" quoth the station manager. "I can hear it running nearly all the time."

The engineer did not want to recommend a new compressor, which in fact was not absolutely needed. He suggested more air storage and it was provided. An auxiliary air storage tank was installed, the same size as the one that came with the compressor. The result was satisfactory. The pressure control was left where it stood originally, adjusted so the pump began work when pressure in the tank was down to 100 pounds and automatically cut off at 125 pounds. But the storage was doubled.

The faithful little compressor in quiet times laid up twice as much reserve for the rush periods. It labored upward to its peak only half as often. It kept cool on Saturdays. Although a bigger compressor might be better for the place, this one meets requirements with adequate storage. The question of storage is important where air requirements are at all drastic, for with a big storage tank any compressor has more chance to rest. And all compressors must rest or meet a premature charge-off.

There is a distinct economy in big storage too. An electric motor uses more current in starting up than it does in maintaining its speed. Frequent starting up is necessary where air storage is too small.

Big storage is not a cure-all for compressor ills however. Big storage will not help a single-stage compressor deliver high pressures, for which it was never intended; nor will big storage help a two-stage compressor deliver air faster—in fact high pressures may be built up quicker in a small tank. Each feature has its own purposes; two-stage compressor for high pressures, single-stage compressors for rapid displacement and big storage to help pass the peaks of irregular demands for air.

Just what peak demands for air are, depend on the run of business as well as the number of machines using air. For instance, if a station sells 1000 gallons of gasoline a day and dispenses it with air operated pumps, the dispensing pumps alone will use 1000 gallons of air a day at a pressure between five and 20 pounds. In order to know the requirement of free air an engineer would have to know the exact pressure used and the number of gallons per day. But at least his recommendation would be to prepare for maximum requirements.

A Rotary Lift uses 25 gallons of air every time it goes up and comes down. The pressure will average 60 to 70 pounds; down to 40 for light machines and up to 100 for big trucks. Representatives of the Rotary Lift will prove to a customer that the air for each operation can be developed for ½ cent. But their figures assume that the air plant is reasonably efficient.

To illustrate how the oil industry's air requirements have multiplied in a few years, one equipment salesman said recently that in visiting filling stations in the last year he had seen several compressors still in use that were capable of displacing only two cubic feet of air per minute. The same salesman says that compressors able to supply only six cubic feet per minute are quite common. But today the manufacturers are turning out machines for the oil trade that are capable of 20 cubic feet per minute.

The insufficiency of one of the older type is apparent when it is confronted with the job of cleaning a gasoline engine when the nozzle of the blower discharges eight to ten cubic feet per minute. Nothing in use at a service station is more expensive in air than engine cleaners, spring oilers and other types of blowers. Some stations operate four or five grease pits with at least one blower for every two pits.

The Rotary Lift people have overcome this to some extent by contriving to oil the springs of automobiles, while the elevator is descending, thus blowing oil between the leaves of the springs with exhaust from the cylinder which supports the weight of the car. With this economy, a compressor designed for tire service is able, ordinarily, to provide air for a Rotary Lift by working five or six additional minutes per customer.

It is fortunate that tire demands are not as drastic now as they were two or three years ago. Balloon tires operating on so much lower pressures, although having bigger air chambers, really contain a less amount of air. Motor cars of the larger types used to require up to 70 pounds of air in their tires. Balloon tires for the same machines today take only 35 pounds. The air chambers of balloon tires (except in rare instances) are not twice as big as the air chambers in the tires they supplanted, and even if they were, scientists tell us, they would not hold more free air than a corresponding standard tire carrying twice the pressure.

Aside from this scientific calculation, it is certainly true that a compressor can deliver a great deal of air at 35 pounds with more ease than a small amount at 70. Any man who ever tried to pump up a standard tire by hand can testify to that. The last few pounds are the hardest.

Not long ago a salesman approached a filling station owner with a proposition to buy an air operated device. The oil dealer flatly refused to look at the thing. Pressed for information the prospect revealed the fact that his electric bill was running $100 a month at a filling station with a gallonage not to exceed 1000 gallons a day. This figured close to ⅓ of a cent a gallon for electricity which the salesman recognized was much too much, even with air operated dispensing pumps and an elaborate lighting system.

Investigation proved that the compressor was not big enough in the first place, was moreover old and worn and not delivering even its own rated capacity, working under the greatest disadvantages. The salesman simply recommended a new compressor of a larger size and a different type and told the oil man he would come back some time after the new installation had proven its economy.

Cool, Dry Air Is Best For Compressor

CHICAGO, Nov. 1.—The ideal air for any compressor to work on is cool and dry. When an air compressor is installed in a filling station, maybe the proprietor can not arrange to put it at the best place, but experts in the business say he should not select the worst spot, which is near the stove or the steam radiator, or in a damp sub-basement.

Compressing hot air is harder on the air pump than compressing cold air, because the warm air is naturally more expanded and there is more compressing to be done to get it down to the desired density.

The objection to damp air is well known. Vapor turns to water in the compressor. The water flows through the air line. No matter how high the air pressure is, (so it is not liquefied), it is lighter than water and the water in the air line will not follow it out. The more water there is in the line in cold weather the more disastrous is a freeze.

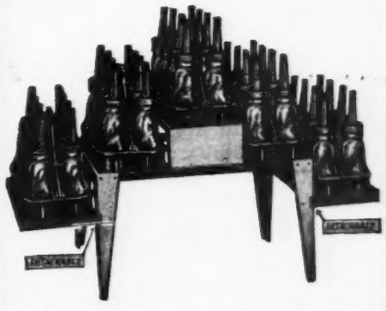
Of course, modern air compressors have traps on the air line to catch the moisture and hold it until it can be let out. This trap, compressor men insist, must be at the lowest point in the air line or it is perfectly useless. It is good practice where possible to select in advance where the trap shall be, make that point the lowest point in the whole air system and all parts of the air line drain to it without dips. Then an air moisture trap is effective. A few spoonfulls of alcohol in the air line is a popular winter safety measure.

BOE

OIL BOTTLES

The Finest of Glass Dispensers

FIND OUT WHY



DO you know why some of America's largest oil marketers prefer Boe Service Sets? Would you like to know about the advantages of this equipment? Return mail will bring you complete details and prices. Mail the Coupon or Write us.

BOE MFG. CO.
MINNEAPOLIS MINN.

TEAR OFF AND MAIL TODAY

Please send us information and prices on Boe service set equipment.

NAME.....

ADDRESS.....

Tidy Equipment Helps Sales And Increases Confidence

Dear N. P. N.:

SO you are going to have an issue mostly telling your subscribers to throw out the old equipment at their filling stations and to put in modern gas and oil dispensing outfits.

It's high time! And there needs to be a lot of throwing away. I am just back from another trip east. Coming back I crossed Pennsylvania, Ohio, Indiana, Illinois, and ventured part way into Wisconsin. I did not jot down the names of the filling stations that needed new equipment; but I think I could tell you, if need be, the locations of stations which do *not* need new equipment.

The total amount of replacement needed right now would far exceed, in my opinion, the fondest dreams of the pump-and-tank salesmanagers.

A Tourist's Difficulty

COMING out of Harrisburg the other afternoon, I stopped for oil. I had been looking for my favorite brand at a good-looking, well-equipped station ever since leaving the Andiron tea room, between Lancaster and Harrisburg. You know, doubtless, how hard it is—almost impossible, in fact—to find the apparently simple combination of your favorite oil and a well-equipped station in which you can feel confident that you will get the oil you specify and that it will be served to you clean, and free from dust, dirt and water.

Well, as I was saying, I stopped at this little station west of Harrisburg. There were eight barrel pumps out on the island, and three gasoline pumps. My favorite brand of oil was advertised to be there alright, but it was served to me out of a dented drum, into which a barrel pump was poked at a perilous angle. The other seven barrel pumps were all crooked and battered, and the three gasoline pumps were shabby—silent, but scandalous-looking representatives of six fine names in the field of branded gasolines and oils.

The Cash Register Was New

INDEED, the only thing around the place that looked new, and as if it was in good working order, was a cash register. The two operators seemed to be careful, neat and regular fellows. I found they ran the station for themselves, and were interested in making more money, because all the profits they got came to them, and were not split with an absentee landlord.

The man I talked to said he hoped to get around to some new equipment some day, that he realized what he had was pretty poor-looking, but that he didn't know just how he could afford a new layout right now.

I asked him about your favorite subject, substitution, and he said that, as long as he could get the branded oils easily and regularly, he would rather sell the goods that moved fast, and not have to do any sales work of his own on some unbranded or unknown stuff.

As for straight-out substitution—that is, giving customers an inferior oil when they ask for a branded article—he said he would not do that on a bet, he had too much repeat trade from people that resided in his community—and anyway, he was not going to cheat, because that was not his idea of building up a business.

Gambling With Good Will

AS I have traveled across the country, especially this summer, I have often wondered what prompts the oil marketers to take such chances as they do take with their good will. If the ordinary grocer tried to retail his valuable merchandise in as careless and slovenly a way as oil stations do, gosh, we'd all stop eating till the stores cleaned up!

I suspect you, too, have noticed that the emblems and expensive signs of really fine oils are displayed at little filling stations and repair shops where you would hardly expect to find a clean spark plug, a place that you would not deal with under any circumstances, unless under the stress of some emergency. Don't these big oil companies value their good will? Or don't they think it is worth while to confine their sales to good places in which the casual motorist, as well as the local customer, can have confidence?

Maybe I expect too much, but it does seem to me as if some day, somewhere, somehow, there ought to be a set of new standards created for the merchandising of *good* oils and gasoline. I should think the refiners and manufacturers of oils, oils especially, and gasolines would want to feel a sense of pride in their retail outlets. Probably it is a mean thing even to think that oil companies' salesmen are paid on the basis of signs erected, rather than gallons of gas and oil sold.

Why Are They Shabby?

CONSIDERING all the money that is invested in the petroleum business, as a whole, why is it that gasoline pumps and oil dispensing equipment are not kept in better shape? I do not think that I am an unusual motorist—in fact, I figure I am pretty much the average. As I travel along, I find that pretty nearly everybody has the idea that, where there's sloppy equipment, there's apt to be short-measure and poor oil. Of course, motorists don't know one make of pump from another, but they sure can and do "size up" stations by the looks of the equipment, as well as by the appearance of the building itself.

It is as one chap said to me, down in Pennsylvania the other day, "Why, I would not even let that station give me water." As I wandered along your Harding highway into Marion, I began to wonder: What does it profit the refiner to spend millions of dollars on producing a better gasoline, and then allow his perfected product to be sold from a shabby pump, perhaps with the dome glass broken? And, again, why should a refiner be so fussy about how his men are dressed at company filling stations—when those same stations permit themselves to use oil-dispensing equipment so old, shabby and "makeshifty" that it is only good enough to be discarded?

Better Looks, More Trade

I DO not suppose that even with all your influence you will be able to get even the main-road stations across this country kept ship-shape and painted up, but I would like to bet you a big red apple that, if you could, the stations that were put in good condition would show a big increase in trade.

You know how it is in the grocery business—the down-at-the-heel store gets worse all the time, and its trade steadily decreases in purchasing power. This same general principle has been and is true of hotels, department stores, publishers and advertising agencies—

Through an Outsider's Eyes

THE accompanying letter contains many interesting sidelights and comments on oil merchandising through service stations, written by an outsider who has nevertheless been a close student of the oil marketing industry through his work in the advertising field. He is also an automobilist of considerable experience. It was as a result of his observations on a trip through the middle west that this letter was written.—Editor.

when they look as if they are partly down and out, they are done.

The same principle is bound to apply to the merchandising of oils and gasolines, sooner or later. Right now, of course, and especially on the main highways a lot of stations survive because their owners expect only day wages and have not the vision to grasp their opportunities. But competition is sure to creep in someday—may it hasten!

Some Splendid Stations

BUT my trip wasn't all disappointment. Some of the big oil companies are doing a fine job in providing the public with good-looking stations at which the equipment is kept up, although it seems to me that they fall very short in that practical merchandising which expresses itself as real service to the motoring public. I suppose it is no business of mine, because I do not own any oil stocks, but I would like to see just one of these larger companies really make an effort to merchandise their products to the hundreds of thousands of tourists that are now pouring over the four main highways between the Mississippi River and the Atlantic Ocean. The fine stations are wonderful advertisements in themselves, but none of the shrewd young men who have desk jobs the marketers seems to have had the practical experience of driving the highways and wondering where his next dependable supply of gasoline and oil was to be found.

Of course, I realize that the bulk of the business at most filling stations is from the local trade, but the tourists are growing in number and spending ability every year. The touring season is more a 12 months' proposition than ever before; and the number of salesmen that use their cars six days a week is increasing by leaps and bounds.

Suggests Better Marketing

YOU do have a lot of good friends in the petroleum field. Can't you gradually get them to see the new viewpoint of service—"he profits most who serves best," you know—and provide us with more easily-gotten-at, more dependable, more confidence-inspiring retail stores where we can buy gas and oil and sometimes a little distilled water for the battery?

If you could do that, you would certainly be more of a benefactor than ever in your particular field. I do not think it would add any to your advertising linage, but, on the other hand, it would give you a feeling of satisfaction, in that you had helped in some measure to add to the pleasure and satisfaction of the 40 million people who constantly drive, operate and ride in automobiles in this country.

LOS ANGELES—L. P. Burgess, vice president of the D & B Pump & Supply Co., Los Angeles, has returned to headquarters after a month spent in the East.

GULF
Refining
Company

General Sales Offices
PITTSBURGH, PA.
District Sales Offices
New York, Houston, Atlanta, Boston, New Orleans, Tampa, Philadelphia

REFINERS OF OKLAHOMA
TEXAS AND LOUISIANA

PETROLEUM

REFINED OIL
GASOLINE
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT

Fuel Oil--Lubricating Oils

CYLINDER ENGINE
CORDAGE

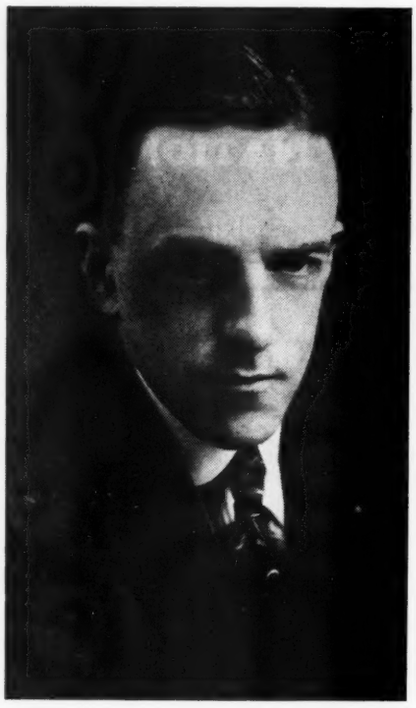
RED AND PALE PARAFFINE OILS

Jobbers Are Now Included in Campaign Of Pennsylvania Crude Assoc.

ATLANTIC CITY, Nov. 1

JOBBERS licensed under the Pennsylvania Grade Crude Oil Association are being asked for contributions for enlarging the national advertising campaign which that organization has conducted for more than two years. Heretofore all of the association's income, (about $100,000 a year, 80 per cent of which is spent for advertising) has been derived from producers and refiners of Pennsylvania grade crude oil. Producer members contribute 1 cent to the association for every barrel of oil their wells yield, and refiners pay 1 cent for every barrel they run.

No such assessment as this has been made upon the marketing companies. They are being asked for a "free will offering." This additional revenue is to make the campaign bigger and broaden the activities of the organization. The producers and refiners, who have supported the movement from the organization of the association in September, 1923, are continuing that support. The jobbers and marketing institutions generally are being allowed a chance to bear some of the expense, not to lighten the burden of the other members but to push the movement along more rapidly.



R. J. Alexander

Benefit to Jobbers

"WE feel that the first benefits and perhaps the greatest benefits from the campaign ahve gone thus far to the men on the firing line—the jobbers," said R. J. Alexander, secretary of the Pennsylvania association, in an address Oct. 27 in Atlantic City before the National Petroleum Marketers' Association. "Many of them have gone into this thing heart and soul, have done local advertising, and have tied up their Pennsylvania brand with our national story and made money out of it.

"So now we have the courage to go out and ask the jobbers for a modest little free-will offering. I suspect that request for a contribution is already in the mail. I tested it out about two weeks ago and the response showed a percentage that was really more encouraging than I expected. To me it indicated a spirit of co-operation, not simply in the form of moral support but in real hard cash. If we don't get that money from some source we will simply go on with the $100,000 a year. The most encouraging source of additional funds is from the marketing element. As one man said to me since I came here, 'The jobbers are crazy about this proposition because it is the first good thing they ever got in their lives that didn't cost them a nickel.'"

"ALTHOUGH it has been difficult to point out the tangible results of the association's work, one big thing has been achieved. The data supporting this is based on a response of about 60 per cent of our marketing members to a questionnaire. The number enclosed those who sell their own brands:

"There are about 612 permit numbers issued authorizing the use of our trademark by what we call marketing members—including refiners and jobbers large and small. For every retail point at which pure Pennsylvania motor oil was sold in 1923, there were three in 1925. In other words we have tripled our distribution in two years. I will be very much disappointed if it is not four to one at the close of 1926. By retail distributing point I have reference to filling stations, garages and retail accessory stores. I believe that speaks fairly well for the interest our message to the public has aroused, and the public's acceptance of the truth about Pennsylvania oil."

The first part of Mr. Alexander's address was devoted to the reasons for the organization of his association and the manner in which its work has been conducted. "Conditions in our field are such," he said, "that we must have a premium for our oil or we can't afford to produce it, and we admit that the most definite justifying factor in its higher price is its lubricating content. All the premium paid for our oil by the refiners must be taken care of in the return they receive from the lubricants. There are, I believe, certain lubricating jobs that are best handled by Pennsylvania lubricants."

Mr. Alexander went into detail on some of the problems of Pennsylvania oil men as such. He mentioned the practice of Tom, Dick and Harry offering for sale so-called Pennsylvania oils which never saw the Pennsylvania field. "There was a tendency also", he said "on the part of some sellers to make it appear that, if a product was refined in the limits of our field geographically that it was justifiably called Pennsylvania oil.

"Now there are refiners in our field which do not refine any Pennsylvania grade crude oil. We felt that by broadcasting the truth of that situation in an honest way it would serve to correct the situation in a marked degree. Study showed that, in order to do this, we must confine ourselves to a scheme of national advertising. Products from Pennsylvania oil are sold in almost every part of the world where oil is shipped, so we adopted national magazines. There is one policy we have followed religiously, and that is 'No mud slinging'. We would like to do a bigger job. I sometimes have to remind our members (some of whom contribute as little as 5 cents a day) that it takes $125,000 to get a contract for color advertising in the Saturday Evening Post.

What is Pennsylvania Grade

"THERE is nothing misleading in our trademark. It means that the oil in the container on which the trademark appears is made exclusively from Pennsylvania grade crude oil. I grant that there are various qualities of finished and semi-finished lubricants made exclusively from our crude. Our field takes in a very small area in western New York, 19 counties in western Pennsylvania, 23 counties in southern Ohio and 21 counties, I believe, in West Virginia. The district produces roughly 50,000 barrels of genuine Pennsylvania crude oil a day.

"Some of the crudes produced within these same limits are not accepted nor bought as pure Pennsylvania grade. They do not sell at the same prices. The quantity of these oils, however, is negligible by comparison with the production of desirable Pennsylvania oil. During 1925 there was a net daily increase in the production of Pennsylvania grade crude oil of more than 3200 barrels. That was from about 46,000 barrels a day up to 50,000 barrels. It was due partly to the water-flood method of recovery practiced so successfully in Alleghany county, N. Y. and in McKean county, Pa. Right now McKean county furnishes approximately half the oil produced in Pennsylvania, and it is top-grade oil.

"The foregoing information comes

7 Reasons why you should buy a BLAW-KNOX BUILDING

1. Economy of the Blaw-Knox Method. No charge for preliminary survey or building plans. Standardized stock sections permit of meeting your specifications for any one-story building.

2. Saving in Time of Erection. No construction delays. Your complete building in one shipment, all parts fabricated for immediate assembly. You know the entire cost in advance.

3. Lowest Cost Per Year Service. Factory made, with no waste of material or labor, insures low initial cost; and copper-bearing galvanized steel gives long life and rust protection with negligible upkeep.

4. Exclusive Protective Features. No bolt or rivet holes in roof sheets—the usual starting point for rust, leaks and expense. Interlocking expansion joints throughout provide weatherproof stability under all conditions of wind and snow pressure and extreme temperature changes.

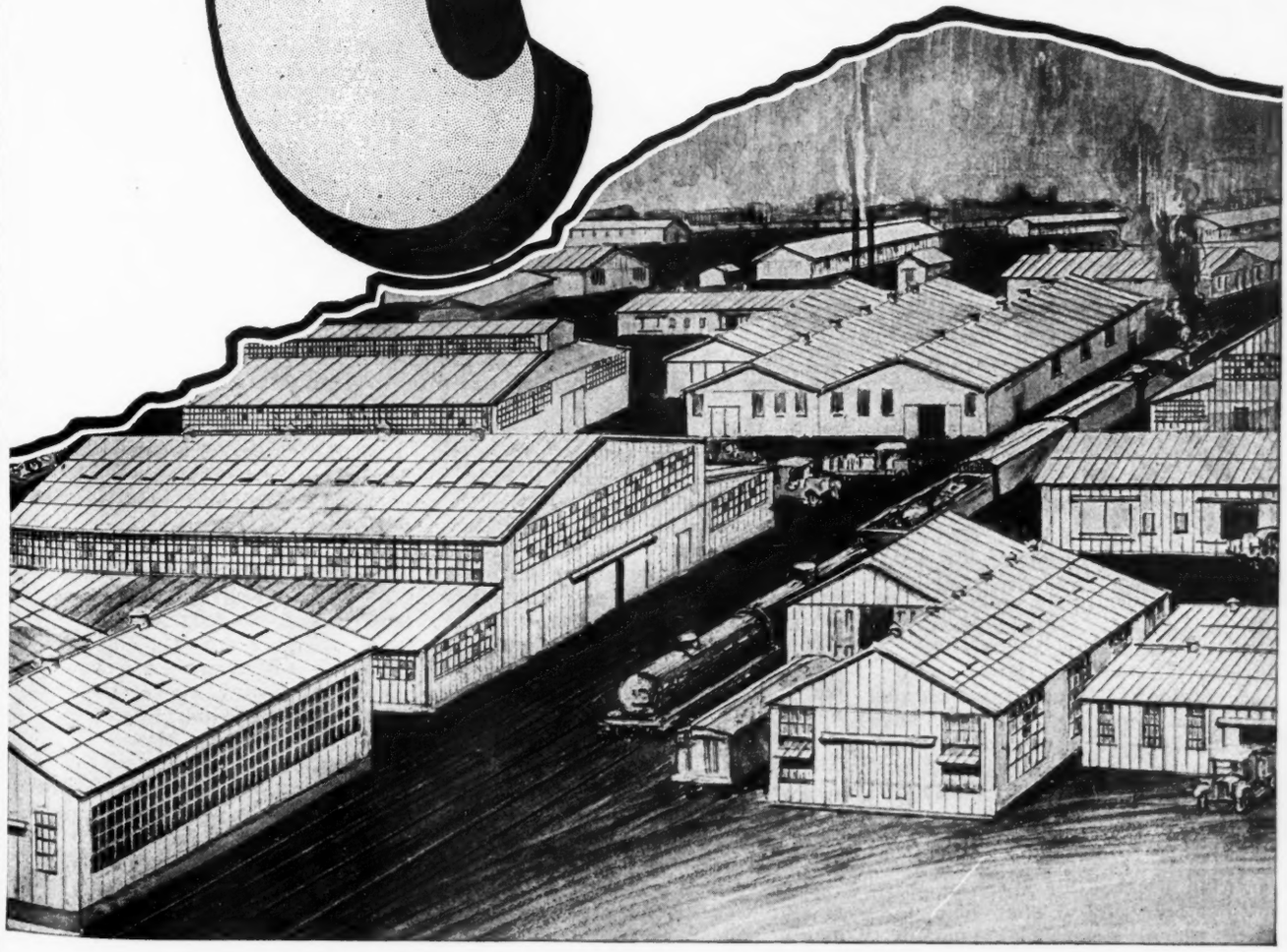
5. Flexibility of Construction. No loss of value in fixed structures. Blaw-Knox buildings are permanent and, at the same time, portable. Can be taken down and re-erected or changed in shape and size as required.

6. Ten Years' Roof Insurance. Blaw-Knox roofs are insured for ten years through a prominent insurance company. This is an unusual practice but one that affords you iron-clad protection.

7. Time-Tested Quality. Blaw-Knox steel buildings reduce fire hazards from external sources. Their perfection of engineering detail and quality of workmanship defy comparison.

BLAW-KNOX COMPANY
Pittsburgh, Pa.
623 Farmers' Bank Building

CLEVELAND 516 Union Bldg.
PHILADELPHIA Colonial Trust Bldg.
NEW YORK **CHICAGO** **BUFFALO** **DETROIT**
BALTIMORE **BIRMINGHAM**



from Government reports and from the same source the amount of Pennsylvania grade crude oil is revealed. In 1925 there was nearly 740 million barrels of all kinds of crude oil refined in this country, including imported crude. From that crude there was a yield of 31,055,000 barrels of lubricating oil, about 4 per cent. I am conservative when I say Pennsylvania grade crude can be made to yield 20 per cent lubricating oil. In 1925 our field produced 18 million barrels of crude oil. On a 20 per cent basis we have raw material from which to make 3,600,000 barrels of lubricating oil. In other words, from our little 2.6 per cent of crude oil run in this country we could develop more than 10 per cent of all the lubricants produced. We could easily lubricate more than 60 per cent of all the automobiles in this country if we were obliged to do it. We don't want to do that, however, for we have our industrial trade to take care of and we have our export business."

Value of Lubrication Chart is Stressed

ATLANTIC CITY, Nov. 1.—Theodore A. Peck, the new lubrication engineer of the National Petroleum Marketers Association, made his first appearance before the association at the afternoon session the 27th. Speaking on "The Spirit of the Whole", he showed the oil jobbing industry the future of the lubrication business as the technical man sees it. He also dwelt upon the part the Red Eagle Lubrication Chart can be made to play in the Independent marketers' business.

"I believe every oil man who sells lubricating oils is on the verge of failure, that every oil man who sells lubrication, instead of merely lubricating oil, is on the high road to success; and that the oil man who sells scientific lubrication has achieved success," he said.

"I have never known of a man going back to cheap lubricating oil after he has once fairly and honestly checked up his motor's performance with a quality product. I do not know of an automobile manufacturer in the world who advises his customers to purchase an unknown or inferior product."

"Before you can hope to interest the motorist or tractor farmer in our lubricating oil products we must establish our right to speak with authority," he said. "The Red Eagle Lubrication Chart represents your authority."

"Today the Red Eagle Motor Oil idea is well established. Watch the chart and do not disregard its teachings. Post it where the world cannot deny attention. Demand that your employes stress its value. Even when they know the grade of oil a given car should use, they should go to the chart and let the customer see they are giving him protection, from which the element of guess work has been entirely removed."

"The Spread Red Eagle Motor Oils are the peer of any motor oil of national distribution."

Wisconsin Plans Closer Relations Between Public and Independents

ATLANTIC CITY, Nov. 1.—Secretary Ray Overholser, of the Wisconsin Independent Oil Jobbers Association, occupied the platform a good portion of the forenoon of Oct. 28 at the National Petroleum Marketers Association's convention here. He was called upon to lead the open forum discussion on several of the questions listed in the official program for discussion. His first discourse was upon question No. 3:

"Shall we work out some model laws governing unfair competition and try to have them passed in our various states or handle it as a national problem requiring national legislation?"

In brief, Mr. Overholser's opinion was to keep government out of business as far as possible by inducing oil men to solve their own problems within the industry. He told about the operation of the Wisconsin Department of Markets, (a governmental department peculiar to Wisconsin) how by close co-operation with the Independent oil men, orders having the force of laws were issued to discourage secret rebating and how that had led to a big state investigation which resulted in the Standard Co's. abolishing the multiple delivery feature of the Quantity Discount Agreement in that state.

He said the enforced Price Posting Order had tended to discourage rebating in large towns where jobbers checked up on one another, but had rather encouraged rebating in small towns where competition was not so keen. He said the Wisconsin Independents had taken the order in good spirit, but that they could not truthfully be said to be enthusiastic about it.

Discuss Irregularities

HIS talk led to a discussion of various marketing irregularities in other states. H. F. Stoke, Stoke Oil Co., Roanoke, Va., told of the big competitors in his neighborhood paying rent for service station operators in order to get their patronage. W. D. Goldberg, Great Pennsylvania Oil Co., Harrisburg, Pa., said one big company in his town made a practice of paying their customers' taxes, provided they would throw out the pumps of all other companies and sell that company's line exclusively. Mr. Overholser mentioned the proposed law in Ohio under the provisions of which all gasoline dispensing pumps would have to post the lowest price at which gasoline was sold. The tendency would be, as pointed out by L. V. Nicholas, to bring the price of all the gasoline sold down to the lowest price, thus shortening margins when they were too long.

Mr. Nicholas, president of the N. P. M. A., broke into the discussion here long enough to say that oil men ought to know when their margins were too wide, inviting undesirable competition, and ought to have a means of knowing how much too wide they were by a proper system of accounting, then reduce their prices and lower the general structure when such measures were needed and actually justified.

Mr. Overholser announced an embryonic plan in Wisconsin whereby the Independent oil man who cuts a price when it needs it may have the moral support of the public in the neighborhood, and inversely when he maintains a price which has been cut unnecessarily by a competitor, he may have the moral backing of the public, knowing his higher price is right.

This, it is hoped, may be worked out by a so-called "Public Relations Board" of which half the members would be business men not identified with the oil industry. The board, according to the plan, is to have no official standing and no authority except as such is imposed in it by common consent of the oil men in the state.

Plans Outside Survey of Oil Marketing

ATLANTIC CITY, Nov. 1.—The National Petroleum Marketers Association may work with the La Salle Extension University, Chicago, on a survey on constructive marketing principles, governing the relations of the Independent oil industry with the public.

At the close of an inspirational address at the evening session the 27th by E. C. Dahm of the La Salle organization, President Nicholas asked the organization to support a resolution empowering him to appoint a committee to direct such a survey, which support was given. He said:

"I feel that we have an oppotunity to get the other fellow's viewpoint on our industry and our industrial contact with the public. I should like to have some outstanding students of modern economic conditions size up the Independent oil industry and see just what it is we lack.

"I want to appoint a committee which can be in touch with the people who are trained to do this work and see what steps we can take."

Mr. Dahm, a member of the La Salle university faculty, spoke on the oil industry as an outsider sees it.

BLADENBORO, N. C.—The Bladen Oil Co., which has been in business for about six months, has just installed three 4000 gallon tanks for lube oil storage. The company has also completed a service station between Charlotte and Wilmington, N. C. and has added another truck to its delivery equipment. Sinclair products are handled.

Jobbers Have Right to Sell Ethyl Gas Under Own Brand Names

ATLANTIC CITY, Nov. 1

THAT the Independent marketing company selling ethyl gasoline must use the trademark of the Ethyl Gasoline Corp. in conjunction with any name that the licensee may adopt for this anti-knock fuel was brought out in the discussion following the talk given by E. W. Webb, president of the Ethyl corporation, at the morning session of the N. P. M. A. convention, Oct. 27.

Mr. Webb talked on "Ethyl Gasoline —Plan of Distribution." (His talk was published in full in Oct. 27 issue of National Petroleum News.) Afterwards he answered questions from oil men in the audience.

One jobber brought up the question whether the refining company licensed by the ethyl corporation to mix and sell ethyl gasoline to the jobbing trade could compel a jobber it licensed to sell this gasoline under the refiner's name. After stating that the jobbers' license contracts provide that the licensee may name and advertise its gasoline under a name other than ethyl gasoline, Mr. Webb stated that there would, within a reasonable time, be enough refiners licensed to manufacture and sell ethyl gasoline so that the jobber could surely find a source that would allow him to sell under his own brand name.

Mr. Webb also said, in answers to questions, that the ethyl gasoline must be sold with the present distinctive red color, that it could not be treated with some other color.

Some of the questions put to Mr. Webb and his answers were as follows:

President Nicholas—How much is the Ethyl Gasoline Corporation incorporated for, and who are the owners and directors?

Mr. Webb—It is incorporated for $5,000,000. The General Motors Corp. owns half and the Standard Oil Co. of New Jersey half. Representing General Motors on the Board are Alfred P. Sloane, its president, Donaldson Brown, vice-president in charge of finances, C. F. Kettering, president of the General Motors Research Corp., and Mr. I. du Pont, who until a few months ago was president of the du Pont company. Representing the Standard Oil Co. on the board are W. C. Teagle, its president, Mr. Senior, president of the West India Refining Co., A. M. Clark, director in charge of manufacturing, and Mr. Frank Howard, who is in charge of the Standard Development Co. of that corporation; then one nonentity, myself, and Mr. Maxwell, our vice-president.

Cost of Treating

L. H. PRICHARD, Anderson & Prichard Oil Corp., Oklahoma City, Okla.—What quantity does this fluid represent per gallon of gasoline and what does it cost per gallon to treat gasoline; also, do various gasolines require different amounts to give results?

Mr. Webb—Ethyl fluid is sold entirely upon the lead content. The tetraethyl lead gives the motor fuel its anti-knock value, but the other ingredients are put in to counteract any mechanical defects that might occur if tetraethyl lead were used alone.

We charge $37.85 a gallon for tetraethyl lead, not the fluid. In a gallon of tetraethyl lead there are 3785 cubic centimeters, and the largest amount which is put in gasoline marketed under the name of ethyl gasoline is three cubic centimeters, so I might say it is sold on the basis of one cent per cubic centimeter.

When a refiner has a contract with us we ask him to send us a sample of his gasoline. We test it for anti-knock value and advise how much lead should be put in. We have some gasolines that require as little as three-quarters of a cubic centimeter of lead to a gallon of gasoline. The standard we have set up is a motor fuel equivalent to 40 per per cent benzol and 60 per cent U. S. motor gasoline.

Paul Himmelfarb, Penn Oil Co., Washington—How is it that the Standard of New Jersey markets its anti-knock fuel under another name than ethyl gasoline?

Mr. Webb—As I understand it, the Standard of New Jersey do not claim in all instances they are selling tetraethyl lead.

Guard Against Dilution

OLNEY REDMOND, of Olney Redmond, Schenectady, N. Y.—Is there anything to prevent anyone handling ethyl gasoline from reducing it, for instance, making different proportions than you recommend?

Mr. Webb—We send out inspectors that check up on mixtures made at refineries and also pick up samples in the field and send to our laboratory to test for anti-knock value. We are going to do everything we can to prevent dilution.

Mr. Redmond—Do you claim any advantage in starting as a winter motor fuel over high test gasoline? Do you claim any more mileage over regular gasoline, or any more power on a hill?

Mr. Webb—Answering your first question, we do not claim any advantage in starting. Any car that knocks of necessity is losing power, and, therefore, losing mileage on the gasoline.

Anythng you can introduce in that gasoline to eliminate the knock and give a proper power distribution to the motor will, I believe, give increased mileage and power.

L. O. Gastineau, Oil Service Co., Charleston, W. Va.—What is the highest compression ratio that tetraethyl lead will operate on satisfactorily? Will it lose its color if it stands for any length of time?

Mr. Webb—Assuming that four and a half to one is a fair ratio for standard cars today our present standard will run satisfactorily on higher compression than this. I don't believe there is any limit if you put enough lead in.

If you let it stand in visible pumps for any appreciable length of time the dye that gives it the color will gradually decompose.

R. E. Doyle, Pennsylvania Petroleum Products Co., Providence, R. I.—Does California gasoline require as large a proportion of lead as other gasolines from eastern crudes? What crude requires the least proportion of lead in the mixture?

Status of California Gasoline

MR. WEBB—The majority of California gasolines that come to our laboratory require on an average less lead than the eastern gasolines. I can't answer your second question.

I. M. Chaplin, Crystal Oil & Gas Co., Johnston, Pa.—Would it be possible, if your company gave the manufacturing franchise for example to 50 refiners, for them to get together and require the jobbers to market the ethyl gasoline under their brand names?

Mr. Webb—I believe there must be 75 Independent jobbers in Pennsylvania selling ethyl gasoline. Half of them, I should say, are selling it under the name of the particular refiner from whom they buy. Some of the others are selling under their particular trade names.

I think the situation will resolve itself something like this. Within a reasonable length of time there should be a sufficient number of refineries which are mixing and selling ethyl gasoline to jobbers, that the jobbers will be able to find refiners who will allow them to sell the fuel under their own brand names.

Our jobber contracts all have a clause which reads, "The licensee may name and advertise its gasoline, when treated with this anti-knock compound under a name other than ethyl gasoline, but agrees that, under no circumstances, will it do so without having the registered trademark of the licensor connected with the name so selected."

Continued on page 54

Stop Right Now!

with chatterless, harmless Tagolene Ford Oil

YES, there are times when Ford brakes must be "jammed on" in a hurry.

And what a "shimmy" and a "chatter" there is then—if Tagolene Ford Oil is not down there in the crank-case and up around the bands.

Tagolene Ford Oil contains Grumol, the new "Chatterless" ingredient which takes the place of "lardy" greasy animal fats.

Tagolene Ford Oil cuts out the chatter, helps the brakes stroke down to a quiet, smooth stop. But it does more. Containing no animal fats, it protects against pitted cylinder walls and greasy crank-case walls, the bane of the Ford motorist using ordinary special Ford Oils.

We offer Tagolene Ford Oil to job-

SKELLY

TAGOLENE

MADE BY THE REFINERS

bers, knowing positively that it is a business-getter.

Experience of hundreds of station attendants and tank-truck salesmen is that Ford Oil business comes a lot easier when all the arguments for Tagolene Ford Oil are used.

Write, wire or telephone for information about Tagolene Ford Oil, and the entire Tagolene line.

Skelly Oil Company

El Dorado, Kansas

TULSA MINNEAPOLIS OMAHA

SKELLY

Ford Oil

OF SKELLY GASOLINE

Oil Men yes—but Business Men too!
AS OIL MEN—we bring to bear upon your oil problems the services of experienced and skilled operators, with the result that the name of Penn-Empire has become well known for its reliability and its unvarying quality. 100% Pure Pennsylvania Crude Oil is the base, refined by generation-trained experts.
AS BUSINESS MEN—we make a point of keeping our delivery promises and meeting the most difficult specifications—at the right price.
Because of this dual combination—Oil Men and Business Men—the most critical oil buyers (who know what they want and demand it) specify Penn-Empire.
We want you to put us to the test—not only the test of the right oil, promptly delivered,—but also the test of increasing business and more satisfied customers.
FINE QUALITY OILS
Prompt Shipments
EMPIRE OIL WORKS, Inc.
OIL CITY, PENNA.
EMPIRE OIL WORKS INC. OIL CITY, PA.
PENN EMPIRE
Guaranteed 100% PURE PENNSYLVANIA OIL
When You Buy Penn-Empire You Get The Best.

COUPON BOOKS

of Every Description

Why not play safe by using ALLISON COUPON BOOKS besides meeting every requirement of good workmanship. They are guaranteed to be accurate.

Write Us for Samples

Allison Coupon Co.

Indianapolis -:- Indiana

(*Continued from page* 51)

So there is no reason why you should not be permitted to sell a particular gasoline under a particular trade name with our trademark attached to it, just as well as any refiner has a right to sell his name tied up with our trademark.

Jasper Redmond, Redmond & Bramley Oil Co., Albany, N. Y.—Is the ethyl gasoline going to be sold on a uniform price basis?

Mr. Webb—Our contracts say nothing about that question. We don't believe that we have any right to attempt to fix the price so that there is nothing in our contracts that obligates the purchaser to sell at any specific price. The chances are that competition will settle the problem.

Station Margin Varies Widely, Jobbers Show

ATLANTIC CITY, Nov. 1.—Fair profit for an oil man is one thing in one place and another thing somewhere else, according to a popular decision reached the morning of Oct. 28 at the N. P. M. A. convention here.

The question arose incidentally from the remarks of H. E. Thompson, Thompson Lubricating Co., Tacoma, Wash. After he sat down C. S. Rosenthal, active head of the Apex Motor Fuel Co., Chicago, took up the question. Mr. Thompson said:

"Out in the northwest corner of the United States, our nearest Red Hat distributor, I think, is Los Angeles. It is farther from Los Angeles to Tacoma than from Chicago to New York. We have started in on the cooperative advertising and we are going to stay with it. We are getting along nicely. Further than that, there is no source of supply out there unless you buy from one of the fellows who is right in your own territory.

"There are six companies there, six companies selling their own product to the public, and we have to buy it from one of these. We are doing it. We are not getting the gallonage. Our margin is 5 cents gross, 3 cents of which goes to the dealer, which leaves 2 cents to the distributor. We have 12 months to work; that is one advantage we have."

Presently Mr. Rosenthal took the floor and said: "Who can say what is a fair price? My friend here from Tacoma thinks 2 cents per gallon permits him to come to a convention at Atlantic City.

"We operate in a large center. I am from Chicago. We operate a retail service station where the rent is $600 a month. We pay six attendants at that station from $140 to $160 in salary. Our light bill is $125 a month. Now, what is a fair profit for that station? Our gallonage is 40,000 gallons a month. It is coming down rapidly. Last year is was $45,000. What is a fair profit."

Advertising Planned by I. O. M. A.

ATLANTIC CITY, Nov. 1.—The closed meeting of the Independent Oil Men of America in the Traymore Hotel, Atlantic City, the evening of Oct. 26, was the beginning of a literal "mustering of forces" by the advertising contingent of the National Petroleum Marketers Association. It was decided to spend six months of the organization's time seeing that the members get all possible benefits from the national publicity campaign.

"It takes nerve to lead. The I. O. M. A. members have made an advanced industrial step by undertaking co-operating national advertising and in so doing they have set themselves up as leaders. It is up to them to set a pace. They will have to make the movement grow by bringing new members into the organization.

"They have all profited by what has been done thus far, but they have not scratched the surface of the possibilities. They will have to bring home the benefits of the national publicity by accomplishing a hook-up between their own outlets and the education the public has begun to get through the national press". That is substance is what L. V. Nicholas, president of the group, said and he and his assistants tried to impress upon the membership at the closed night meeting.

The advertising on Spread Red Eagle will be local advertising for some weeks to come. Large posters, attractive signs at stations, home town newspaper advertisements and reading matter, will be the principle things impressed by the publicity director of the I. O. M. A. Then, with the beginning of the touring season again, the advertising in nationally distributed publications will start once more. The present plan is to talk to the motoring public in double page spreads in national magazines all next season.

Besides the spirited talk by Mr. Nicholas, T. A. Peck delivered an address. Mr. Peck is the new head of the department of lubrication engineering and his remarks were about Red Hat motor oil, the uniform brand being sold by I. O. M. A. members. Following Mr. Peck, Raymond Shaw, director of publicity, talked for a few moments outlining the service his department is prepared to give to members. F. J. Silsbee, assistant to President Nicholas, followed Mr. Shaw. He discussed the matter of new members, the kind that are desired by the I. O. M. A. and the manner in which they are selected.

WASHINGTON, D. C.—New storage tanks have recently been added to the South Washington plant of the American Oil Co., which doubles the storage capacity of that plant. Pumping and blending equipment has also been increased to handle increasing demand for Amoco motor fuel and the new American Gas, according to Lee Sonneborn, manager at Washington.

5-Times *the* Profit *Per Sale*

ASSORTMENT NO. 1
Larkin-Thuro Pin Fittings
Each carton contains:
15 packages, ten each ⅛" straight
5 packages, five each ⅛" 90 degrees

ASSORTMENT NO. 2
Larkin-Thuro Cone Type Fittings
Each carton contains:
15 packages, ten each ⅛" straight
5 packages, five each ⅛" 65 degrees

Thousands of cars are running around with lost or broken fittings because their owners forget to buy new ones.

The attractive, four-color Larkin-Thuro counter display carton pictured above not only reminds them to buy but sells them the idea of carrying spare fittings in their cars.

Each display carton contains twenty packages of fittings of either pin or cone type, assorted as described at the left. With a small investment covering the cost of the fittings only, this display carton provides an easy way to sell the car owner five or ten fittings where he might otherwise buy one or two and insures you five times the profit per sale of fittings.

If you aren't already selling Larkin-Thuro Fittings here's a chance to give them a trial with nominal investment. Just ask your Jobber to include one carton each of Larkin-Thuro Pin and Cone Type Fittings with your next order. Then watch your trade take to the spare fitting idea.

—made exclusively for repair or replacement on any car or truck originally equipped with Alemite or Zerk Systems.

LARKIN High Pressure "Puts the Grease where the Squeak Is" Lubricating Equipment THURO

Ask your Jobber today, or, if he can't supply you, write direct to us for full information, giving Jobber's name.

The Larkin Automotive Parts Co.
Dayton, Ohio

Larkin-Thuro Lubrication keeps the up-keep down

Exhibitors to Have Voice in Plans Of Future Conventions

By Ward K. Halbert
N. P. N. Staff Writer

ATLANTIC CITY, Nov. 1

EXHIBITORS at the annual convention of the National Petroleum Marketers Association this week in Atlantic City had more to say about the management of affairs than usual, due to an arrangement developed by Raymond Shaw, the association's director of publicity.

Mr. Shaw suggested a self-perpetuating "exhibitor's committee" to represent and act for them in matters pertaining to their interests at conventions. The committee served the exhibitors at Steel Pier, Oct. 26, 27 and 28, and another similar one will do the same at the 1927 conventions.

The committee appointed by Mr. Shaw called all the exhibitors into a pre-convention meeting at Atlantic City on Oct. 25, before the convention opened officially. There suggestions of the equipment manufacturers were brought up and discussed. Their requests were carried out for the most part, through officials of the N. P. M. A. and the management of the Pier.

The afternoon of Oct. 26 another exhibitor's meeting was held and the new committee was chosen. It is composed of R. L. Heaton, S. F. Bowser & Co., Fort Wayne, Ind.; J. A. Cadle, the McSavany Co., Springfield, O.; J. E. Dutton, St. Louis Can Co., St. Louis; A. R. Harris, National Petroleum News, Chicago, and E. R. Jackson, The White Co., Cleveland.

The morning of the 28th the committee held a brief session and chose Mr. Heaton chairman. He had been chairman of the committee selected earlier. Subsequently Mr. Heaton made the public request that any company accustomed to exhibit at N. P. M. A. conventions (including those with exhibits at Atlantic City, those who have exhibited at previous conventions and those who expect to exhibit at future ones) who have any suggestions to offer with regard to the exhibitors generally, get in touch with him at once.

New Pieces of Equipment

WESTERN exhibitors especially, at this meeting, expressed themselves as pleased to meet such a large number of oil men from the eastern states, many of whom were strangers and had never before been given a chance to see their merchandise. Inversely, the western oil men were given an opportunity to see items of equipment manufactured and used generally in the east but not so well known in the west. There were many items of equipment shown on Steel Pier that have never been exhibited to a large gathering of oil men before.

The Devices Corp., Cambridge, Mass., were not showing oil station equipment or merchandising helps, but were offering something for re-sale by the oil men. It is a device for cleaning cushions of automobiles, made to retail at $5. The machine consists of a small vacuum cleaner to be manipulated by one hand. The vacuum is created by connecting the hose on the handle of the cleaner with the intake manifold on the automobile. Thus the engine with its own power cleans the seats, linings, carpets, etc. It is provided with means to divert the dirt so it never comes near the motor.

Heil Co. of Milwaukee, Wis., attracted a great deal of attention with a new attachment for a tank truck called a "Power Takeoff." With it a tank truck, by its own motive power, may load itself, unload itself, or pump from one outside tank to another. The layout of pipes, pumps and valves rides on the truck all the time and is attached to the transmission. It is of especial interest to jobbers engaged in the domestic fuel oil trade who wish to shorten the unloading time of their trucks and often need to dump oil in householders' tanks installed higher than the street grade.

St. Louis Can Co. for the first time exhibited their new five-gallon Pour-Ezee tilting drum. In shape the oil can is more or less like a big hat box with handles and spout on the circumference. The drum meets I. C. C. specifications and will ship without a crate. The two handles are so spaced as to be most convenient for two hands to grab them. The lip is protected and is under one of the handles. One of the handles is hollow and the other loaded so, when left alone, the drum will right itself, lip upwards. A feature is the advertising space available on its circular sides.

Rolling Service Station

THE WHITE CO., of Cleveland kept a crowd around its unusual tank truck, built like a fire truck, finished like a limousine, having the proportions of an inter-city passenger bus, with two Fry gasoline pumps mounted on the back platform. It is a rolling filling station with lube oil tanks, water and air dispensing devices. Company representatives say it has found its first ready sale to fire departments in big towns. Fire companies use them to replenish the gasoline supply in fire trucks when they are engaged in fighting big fires and have to pump water in one spot for a long time. It is said the Chicago fire department has bought three.

The "Puritan Rekording Funnel" was among the unique things on display this year. Its purpose is to measure the gasoline that flows from a tank wagon into the underground tank at the filling station. It is a small machine; can be lifted with ease by one man from one fill-pipe to another. Under a small glass on the outside of the funnel, figures appear as on an adding machine telling the number of gallons that have passed through it. The meter registers up to 9999 gallons and goes back to zero. The funnel is supposed to remain at the filling station. If the jobber sells two grades of gasoline at different prices and wants to keep their inventories separately, two funnels at one station are necessary. It is made by Puritan Engineering Corp., Fort Wayne, Ind.

Sharpville Boiler Works exhibited a steel drain pit, built of heavy plates with all seams doubled welded. To install

THE EXHIBITORS

American Can Co.	Chicago, Ill.
American Oil Pump & Tank Co., The	Cincinnati, Ohio
Aqua Oil Service, Inc.	New York City
Association of National Gasoline Mfrs.	Tulsa, Okla.
Automobile Rotary Lift Co.	Chicago, Ill.
Au-to Compressor Co., The	Wilmington, Ohio
Bennett Pumps Corporation	Muskegon, Mich.
S. F. Bowser & Co., Inc.	Ft. Wayne, Ind.
Buckeye Iron & Brass Works	Dayton, Ohio
Canfield Oil Company, The	Cleveland, Ohio
Champion Pneumatic Machinery Co.	Chicago, Ill.
Cincinnati Advertising Products Co., The	Cincinnati, Ohio
Davis Welding & Mfg. Co., The	Cincinnati, Ohio
Devices-Corporation	Cambridge, Mass.
Economy Engineering Co.	Chicago, Ill.
Erie Service Station Equipment Co.	Erie, Pa.
"Exhibitors Committee Headquarters"	
Galena-Signal Oil Co. (of Texas)	New York City
Gasoline Register Co.	Chicago, Ill.
Globe Mfg. Co.	Battle Creek, Mich.
Guarantee Liquid Measure Co.	Rochester, Pa.
Hartol Products Corp.	Newark, N. J.
Heil Co., The	Milwaukee, Wis.
Independent Oil Men of America	Chicago, Ill.
Kewanee Safe Company	Kewanee, Ill.
Macbeth-Evans Glass Co.	Charleroi, Pa.
Martin & Schwartz	Buffalo, N. Y.
Marvel Equipment Co.	Cleveland, O.
McSavaney Company, The	Springfield, O.
Merit Oil Equipment Co., The	Cleveland, O.
Milwaukee Tank Works	Milwaukee, Wis.
Moore & Kling, Inc.	Boston, Mass.
National Petroleum News	Cleveland, Ohio
Neil & Company, Wm.	Chicago, Ill.
Pennsylvania Grade Crude Oil Assn.	Oil City, Pa.
Pennsylvania Flexible Metallic Tubing Co.	Philadelphia, Pa.
Quaker City Iron Works	Philadelphia, Pa.
Quincy Compressor Co.	Quincy, Ill.
Rhodes Co., Jay B.	Kalamazoo, Mich.
St. Louis Can Co.	St. Louis, Mo.
St. Louis Pump & Equipment Co	St. Louis, Mo.
Sharpsville Boiler Works Co.,	Sharpsville, Pa.
Shotwell Pump & Tank Co.	Boston, Mass.
Vacuum Oil Co	New York City
Wackman Welded Ware Co.	St. Louis, Mo.
Waverly Oil Works Co.	Pittsburgh, Pa.
White Company, The	Cleveland, Ohio
Williams Sealing Corporation	Decatur, Ill.

Seeks Suggestion

The Exhibitors' Committee requests that any company maintaining displays at a past or present N. P. M. A. convention, or considering doing so in the future, which has any suggestion to make with regard to the handling of the exhibits generally, communicate with it at once.

one, all the jobber has to do is dig a hole to a given dimension and put the tank in it. It is equipped with a channel iron drive for automobiles, a funnel and pipe to drain away the waste crank case oil, a ladder to enter the bit by, provision for a sump and, in fact, all the modern equipment a drain pit needs.

Erie Service Station Equipment Co. exhibited its new "Metered Gasoline Pumps" featuring a dial arrangement whereby the customer may have his tank filled, no matter what its vacant capacity may be, read on a dial the amount of gasoline delivered to him and pay accordingly. These pumps are well known to customers of Atlantic Refining Co. stations in Pennsylvania. They help to overcome the expensive "Give me five" habit of the motorist.

The Boston Auto Gage Co., Pittsfield, Mass., attracted a great deal of attention with its new "Levelscope." By a simple air pumping contrivance in his office, an oil man may obtain an accurate quantity reading of the gasoline in any tank in the plant or on the tank farm.

The Gasoline Register Co. of Chicago kept busy demonstrating its mechanical checking attachment for gasoline dispensing pumps. With it an oil jobber may get a cash register tape every day from every pump showing the number of sales made and the number of gallons discharged to each customer. Moreover when it is used the customer gets a printed receipt for his purchase.

The smallest commercial air compressor was shown in Atlantic City by the Quincy Compressor Co. It is designed especially for way-side hot-dog stands selling gasoline, for curb pumps with limited gallonage, or for private garages. It is built to serve limited air requirements.

Williams Sealing Corp., Decatur, Ill., showed an elaborate exhibit of bottle tops. They come in all manner of colors, in several sizes and fasten in two or three different ways. It was a colorful exhibit, in as much as it incorporated oil cans for which the tops are designed. Mr. O. L. Williams was in charge of the exhibit. A complete list of exhibitors is shown herewith.

The Prize Drawing

THE prize drawing, participated in by registered jobbers, each having tickets according to the amounts spent with an exhibitor, took place on Thursday afternoon. There were 76 prizes, all donated by the exhibitors. The result of the drawing follows:

1. One model "X" air tower, from Quincy Compressor Co. to Walburn Petroleum Co., New York, N. Y.
2. One 1¼ shut-off nozzle for wet hose, from St. Louis Pump & Equipment Co. to Peffer Oil Co., Wilkesbarre, Pa.
3. One set Heil full flow truck tank vents, from The Heil Co. to Roy H. Weaver, Montgomery, Pa.
4. One 5¼ in. by 2 in. Moore & Kling brass swivel tank car connection, to Lincoln Oil Corp., Camden, N. J
5. One Ross vacuum auto cleaner, from Devices Corp. to Independent Oil Co., Altoona, Pa.
6. One 1¼ shut-off nozzle for wet hose, from St. Louis Pump & Equipment Co. to Schultz Service Station, Toledo, Ohio.
7. One 1¼ shut-off nozzle for wet hose, from St. Louis Pump & Equipment Co. to Mane Oil Co., Inc., Briarcliff Manor, N. Y.
8. One 1¼ shut-off nozzle for wet hose, to Lincoln Oil Corp., Camden, N. J.
9. Either four 60 gallon Highboys or six 30 gallon Highboys, from Bennett Pump Co. to Valley Oil Co., Mt. Porteous Pa.
10. One set Moore & Kling interchangeable price signs, from Moore & Kling, Inc., to National Speedway Refg. Co.
11. One 10 ft. length 1¼ in. gasoline hose, Erie Service Station Equipment Co., Roy H. Weaver, Montgomery, Pa.
12. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Robert E. Reedy & Sons Oil Co., Llewellyn, Pa.
13. One Ross vacuum Auto cleaner, Devices Corp., Lincoln Oil Corp., Camden, N. Y.
14. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Independent Oil Co., Altoona, Pa.
15. One set Moore & Kling visible oil servers, Moore & Kling, Inc., Art Vanbochone, Kalamazoo, Pa.
16. One Ross vacuum auto cleaner, Devices Corp., Fairmount Oil Co., Cleveland, Ohio.
17. One set Heil full flow truck tank vents, The Heil Co., Warren Refg. Co., Cleveland, Ohio.
18. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Independent Oil Co., Altoona, Pa.
19. One Ross vacuum auto cleaner, Devices Corp., Herring Motor Co., Des Moines, Iowa.
20. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Unknown 5549.
21. One set Heil full flow truck tank vents, The Heil Co., Warren Refg. Co., Altoona, Pa.
22. 3 10 gallon lubricating oil delivery cans, Wackman Welded Ware Co., Schultz Service Station, Toledo, Ohio.
23. One 10 in. length of 2 in. Mooreflex unloading hose, Moore & Kling, Inc., Great Penn Oil Co., Harrisburg, Pa.
24. One No. 200 gasoline or kerosene pump, Shotwell Pump & Tank Co., Unknown 5733.
25. One Fig. 222 air tower, water and lights, S. F. Bowser & Co., Inc., Peffer Oil Co., Wilkesbarre, Pa.
26. 3 5 gallon lubricating oil delivery cans, Wackman Welded Ware Co., Valley Oil Co., Middletown, Conn.
27. One Ross vacuum auto cleaner, Devices Corp., Rogers Gasoline Co., Uniontown. Pa.
28. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Regal Oil Refg. Co., Piqua, Ohio.
29. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Weeks Oil Co., Auburn, N. Y.
30. One set 2 in. emergency valves for compartment truck tanks, The Heil Co., Valley Oil Co., Middletown, Conn.
31. One $100 artistic globe, Cincinnati Advertising Products Co., Lincoln Oil Corp., Camden, N. J.
32. One No. 176 pump with pedestal, Merit Oil Equipment Co., Knox Oil Co., Mt. Vernon, Ohio.
33. One 1¼ shut-off nozzle for wet hose, St Louis Pump & Equipment Co., Weeks Oil Co., Auburn, N. Y.
34. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Thomrson Lubricating Co., Tacoma, Washington.

Spread Eagles in 4000 Towns

"The Spread Red Eagle is right now displayed in over 4000 towns in this country", Ray Shaw, advertising director, told the N. P. M. A. in the course of his remarks the evening of the 27th on the progress of the collective advertising program.

"We are getting up the list of towns. It is not complete, but I know of over 4000 towns where it has been put into use within the past two years."

35. One Ross vacuum auto cleaner, Devices Corp., Lincoln Oil Corp., Camden, N. J.
36. One Ross vacuum auto cleaner, Devices Corp., Lincoln Oil Corp., Camden N. J.
37. One type "A" combination fill pipe and street box, Moore & Kling, Inc., Lincoln Oil Corp., Camden, N. J.
38. One 1¼ shut-off nozzle for wet hose St. Louis Pump & Equipment Co., Friars, Inc., Camden, N. J.
39. $50 credit on merchandise purchased, The Canfield Oil Co., Herring Motor Co., Des Moines Iowa.
40. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Art Vanbochone, Kalamazoo, Pa.
41. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Brewer Petroleum Service, Boston, Mass.
42. One Puritan Rekording funnel, Moore & Kling, Inc., H. Ross, Maddocks, Cambridge, Mass.
43. One Ross vacuum auto cleaner, Devices Corp., Quaker Oil Co., Inc., Plainfield, Ind.
44. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Roy H. Weaver, Montgomery, Pa.
45. One No. 41 air hose assembly, The Au-to Compressor Co., Peffer Oil Co., Wilkesbarre, Pa.
46. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Walburn Petroleum Co., New York, N. Y.
47. One 2½ ft. by 6 ft. electric sign (any copy), The McSavaney Co., Valley Oil Co., Middletown, Conn.
48. $100 credit on merchandise purchased, The Canfield Oil Co., Art Vanbochone, Kalamazoo, Pa.
49. One Ross vacuum auto cleaner, Devices Corp., Regal Oil Refg. Co., Piqua, Ohio.
50. $30 credit on merchandise purchased Canfield Oil Co., Weeks Oil Co., Auburn, N. Y.
51. $25 in trade, Globe Mfg. Co., Roy H. Weaver, Montgomery, Pa.
52. One 55 gallon cylinder No. 5561, Guarantee Liquid Measure Co., Walburn Petroleum Co., New York, N. Y.
53. One Laboratory gasoline test, Assn. Natural Gasoline Mfrs., National Speedway Refg. Co.
54. One set 2 in. Emergency valves for compartment truck tanks, The Heil Co., Friars, Inc., Camden, N. J.
55. One 2 in. double poppet foot valve, Moore & Kling, Inc., Independent Oil Co., Altoona, Pa.
56. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Boynton Service Station Co., Meadville, Pa.
57. One carton 4 glass jardiniers (ass't colors), Macbeth Evans Glass Co., Beaver Oil Co., Mountain View, N. J.
58. One type 14-A visible lube oil outfit, Milwaukee Tank Works, Art Vanbochone, Kalamazoo, Pa.
59. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co. Unknown.
60. 50 gallon Pour-Ezee tilting drums, St. Louis Can Co., Tri-Point Oil Co., Madison, Ind.
61. One No. 41 air hose assembly, The Au-to Compressor Co., Fairmount Oil Co., Cleveland, Ohio.
62. One 1¼ shut-off nozzle for wet hose, St. Louis Pump & Equipment Co., Independent Oil Co., Altoona, Pa.
63. One Ross vacuum auto cleaner,

Devices Corp., Superior Oil Co., Biloxi, Miss.

64. One 10 ft. length 1 in. gasoline hose, Erie Service Station Equipment Co., Sistersville Tank & Boiler Works, Sistersville, W. Va.

65. One Kewanee Service Station Safe, Kewanee Safe Co., Lincoln Oil Corp., Camden, N. J.

66. One Duofold Fountain Pen & Pencil Set, Economy Engineering Co., Independent Oil Co., Altoona, Pa.

67 50 5-gallon Pour-Ezee tilting drums, St. Louis Can Co., Quaker Oil Co., Inc., Plainfield, Ind.

68. One set 2 in. emergency valves, The Heil Co., Warren Refg. Co., Cleveland, Ohio.

69. $20 credit on merchandise purchased, The Canfield Oil Co., Quaker Oil Co., Plainfield, Ind.

70. One Fig. R-24 display rack, Wm. Neil & Co., Valley Oil Co., Middletown, Conn.

71. One pair brass candlesticks (artistic design), Buckeye Iron & Brass Works, Independent Oil Co., Altoona, Pa.

72. One Fig. 69 lube outfit (display tube, gallon meter), S. F. Bowser & Co., Inc., J. C. Reagan, Spot Oil Co., Tully, N. Y.

73. Miniature White Truck Chassis, The White Co., Herring Motor Co., Des Moines, Iowa.

74. Brief case, Quaker City Iron Works, J. B. Wilson, Somerset, Pa.

75. One drum of oil, Hartol Products Co., Friars, Inc., Camden, N. J.

76. One lamp post, Aqua Oil Service, Independent Oil Co., Altoona, Pa.

Oil Industry Endorses Arbitration Of Commercial Disputes

ATLANTIC CITY, Nov. 1

AT the close of a stirring address by Judge Moses H. Grossman, head of the American Arbitration Association, at the afternoon session the 27th, the National Petroleum Marketers Association went on record as endorsing the principle of arbitration of commercial disputes. Further, it authorized President Nicholas to appoint a special committee to inquire into the practicability of applying arbitration to the petroleum industry.

"This may be the most important step this association has ever undertaken", commented Mr. Nicholas, adding he would take considerable time to select this committee.

Judge Grossman offered the help of the arbitration association in making a survey of conditions in the oil industry to determine how this principle of arbitration of trade disputes, now provided for by law in four states and by a federal statute, can best be applied.

He said that bills providing for establishment of the principle of arbitration, similar to laws now effective in New York, New Jersey, Massachusetts and Oregon, were to be introduced in all state legislatures this winter and asked the support of oil men in bringing about their adoption as laws.

"By this law now enacted in these four states, any dispute which may arise between two parties, which might be made the subject of a court action, may be disposed of in an hour, or a day, or a week by a process called arbitration," said Judge Grossman.

Principle Is Simple

ARBITRATION is a simple three, four, or five line agreement. I, Tom Jones, and I, Bill Smith, hereby, agree to leave to L. V. Nicholas, (for example) the determination of the following question. Then put in your question, whether it is a promissory note, a breach of warranty, or anything else.

"Nicholas takes an oath and appends it, saying 'I solemnly swear that I will do justice between the parties.' The very minute he appends his oath to that little stipulation the law confers on him all the powers of a judge, just as if he had the label, 'Supreme Court Judge.'

"He can issue subpoenas, bring in witnesses, books and papers and hear the evidence, not like a judge in court, fettered by rules of law; but as any merchant would hear it, not bound by rules of evidence or rules of practice or rules of pleading. When he reaches a conclusion a judgment of the Supreme Court is entered. It becomes as much a judgment as if rendered by the Supreme Court itself and it can't be set aside except for bribery, corruption, malpractice or misconduct.

"This law also provides that, when a contract is made, even a contract of sale, if you put in these few words 'any dispute under this contract must be arbitrated,' you have a policy of insurance against the possibility of a lawsuit. You can't sue and you can't be sued."

After showing the benefits that have come to some industries that have adopted the principle of arbitration to their own trade disputes, Judge Grossman said the advantages would be greater than could be estimated for the petroleum industry because of the great volume of material handled on contracts and the technical nature of the problems arising, which are difficult of equitable settlement in courts of law.

N. Y. Gasoline Dealers Incorporate

NEW YORK, Nov. 2.—An organization of Independent gasoline dealers in New York City has been incorporated as Petroleum Merchants, Inc., to create better feeling among this class of dealers. The eight companies which are members have had an organization for three months, meeting every two weeks, and their association was incorporated two weeks ago, for purely social purposes, officials say.

The eight member companies are Crycraft Oil Co., Lotus Oil Co., Excelsior Oil Co., Marvel Oil Co., Atlantic Basin Oil Co., Public Service Oil Co., Paragon Oil Co. and Utility Oil Corp.

Mr. Crycraft is president and Benjamin Javits is attorney and secretary.

The Utility Oil Corp., of which S. Margolis is president, maintains deepwater storage at Bayonne and secures its gasoline from various sources through two chartered tankers. It supplies some of the member companies of Petroleum Merchants, Inc., with their gasoline.

East Coast Independents Are Organized

ATLANTIC CITY, Nov. 1.—What is said to have been the last section of this country to be without a district organization of Independent marketers threw in with the rest at this meeting of the N. P. M. A., when the Independent Petroleum Marketers of the Middle Atlantic States was formed.

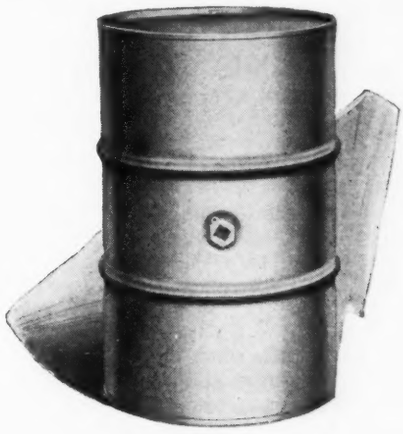
After a meeting to which oil jobbing companies from Pennsylvania, Maryland, Delaware, New Jersey and District of Columbia were invited, held at Steel Pier the 27th, it was announced that 35 firms in this section had pledged enough to enable hiring a paid secretary. Permanent headquarters will be established in Philadelphia.

J. Shlifer, Philadelphia, Intercity Oil Co., and Stanley Rusk, Philadelphia, Rusk Oil Co., the two men who first started the movement for this district association, presided at the organization meeting. Secretaries of other state associations told what their activity meant to the Independent jobbing industry. F. J. Silsbee, assistant to President Nicholas of the N. P. M. A., also spoke to the oil men assembled.

Officers of this newest district association are: President R. C. Paul, Harrisburg Oil & Supply Co., Harrisburg, Pa.; first vice-president, Claude Hearn, Hearn Oil Co., Wilmington, Del.; second vice-president, F. H. Tripp, Lincoln Oil Co., Camden, N. J.; treasurer, Mr. Rusk.

Directors, in addition to the officers and Mr. Shlifer, organizer, are: Clarence Shock, Shock Independent Oil Co., Mount Joy, Pa.; John W. Sherwood, Sherwood Bros., Baltimore, Md.; M. H. Levinson, Peerless Oil Co., Scranton, Pa.; Harry Sherby, Mylex Oil Co., Washington, D. C.; Paul Himmelfarb, Penn Oil Co., Washington; C. R. Harned, C. R. Harned Oil Co., Allentown, Pa.; Mortimer Levy, Liberty Oil Co., Pottsville, Pa.; and Paul F. Erdman, Subway Oil Co., Reading, Pa.

WICHITA Kans.—The Cities Service Oil Co. recently acquired the property of the Independent Oil Co. Neosho, Mo., which consisted of a bulk plant and two service stations, together with a number of curb pumps in Newton and McDonald counties. The sale was made through the Refiners Consolidated Sales Co. of Wichita, which specializes in deals of this kind, reports Myers Gross, president of the latter company.



Cleveland Steel Barrels

THERE is a Difference in Steel Barrels! When you buy a Cleveland Steel Barrel you are buying Real Shipping Service—something that is built into every barrel that leaves our plant. These sturdy Carriers of Commerce will deliver your product in safety no matter how rough the handling or how long the road.

The Cleveland Steel Barrel Co.

CLEVELAND, OHIO.

CSB

THERE IS A DIFFERENCE IN STEEL BARRELS

All Useful Material Salvaged by Pure When Skimming Plant is Dismantled

By J. C. Chatfield
N. P. N. Staff Writer

TULSA, Nov. 1

UNHONORED and unsung except by its immediate circle of friends, one of the pioneer skimming plants of Oklahoma has terminated its career of service to mankind and the Pure Oil Co. Dismembered by the ruthless hand of progress, its parts have been scattered to various sections of Oklahoma where they are expected to render further useful service for a number of years to come.

From brick used for still settings to venerable agitators, equipment of the Cushing plant of the Pure is being sold or utilized at other plants. The method of dismantling is an example of the best modern practice in the petroleum industry of minimizing waste by using all good material for other purposes when it has ceased to be of value where it was originally employed.

The Cushing plant was built in the height of Oklahoma's second big oil boom when the Cushing pool was flooding the oil market. Armstrong, Gunsberg & Foreman, operating as the International Refining Co., began construction of the plant in Dec. 1914 and finished their work in April 1915. It began operations immediately, charging at times up to 7500 barrels of crude per day to the stills.

In those days the refinery was a highly efficient unit as skimming plants went. It was recovering from 32 to 33 per cent gasoline from the crude. Later improvements brought about by the installation of fractionating towers brought the yield from Cushing crude up to 35 to 36 per cent.

Constantly Operated

FROM the time it was started in operation until Feb. 15 of this year the plant was never shut down except temporarily for repairs. There was no interruption in operations when the plant was purchased by the Pure Oil Co. a number of years ago.

For 10 years and 10 months the plant averaged a run of 5000 barrels of crude per day. As mentioned above, runs were as high as 7500 barrels per day at times, and there were no extended shut downs.

Averaging 150,000 barrels of crude per month during the entire useful life of the plant of 130 months it will be seen that the stills have processed roundly 19,500,000 barrels of oil. A tank farm of 350 tanks of 55000 barrels capacity would be needed to store all of the oil if gathered at one point.

Figuring the yield of gasoline at the conservatively low estimate of 33 per cent during the life of the plant, the refinery produced 270,270,000 gallons of gasoline. This would supply the entire motor fuel demands of the United States for a week at the rate of use in August of this year.

In spite of the fact that the plant was kept in condition for constant operation throughout its life it is surprising that the refining division was able to realize approximately $125,000 from the sale of material after deducting all expenses of wrecking. Material was sold largely at junk prices based on a fraction of the going market for new like material.

Moving Tankage

THERE were 22 storage and run-down tanks on the refinery site when dismantling was begun on Mar. 1, with a total capacity of 123,500 barrels. In addition there were two agitators with a capacity of 3000 barrels. Each of these tanks was cut down and cleaned at Cushing and the plate sold to the company's plant at Muskogee which has been undergoing a campaign of expansion. The average cost of cutting down and cleaning the 22 tanks and two agitators was $210 per tank.

There was one 55,000 barrel tank at the Cushing plant which cost $1,017 to cut down and clean and $3,800 to move and rebuild at Muskogee This, as well as all other tanks, was sold to the Muskogee plant at 50 per cent of the cost of like material erected at Muskogee The sales price of the 55 was thus $7,700 and the net to the Cushing plant

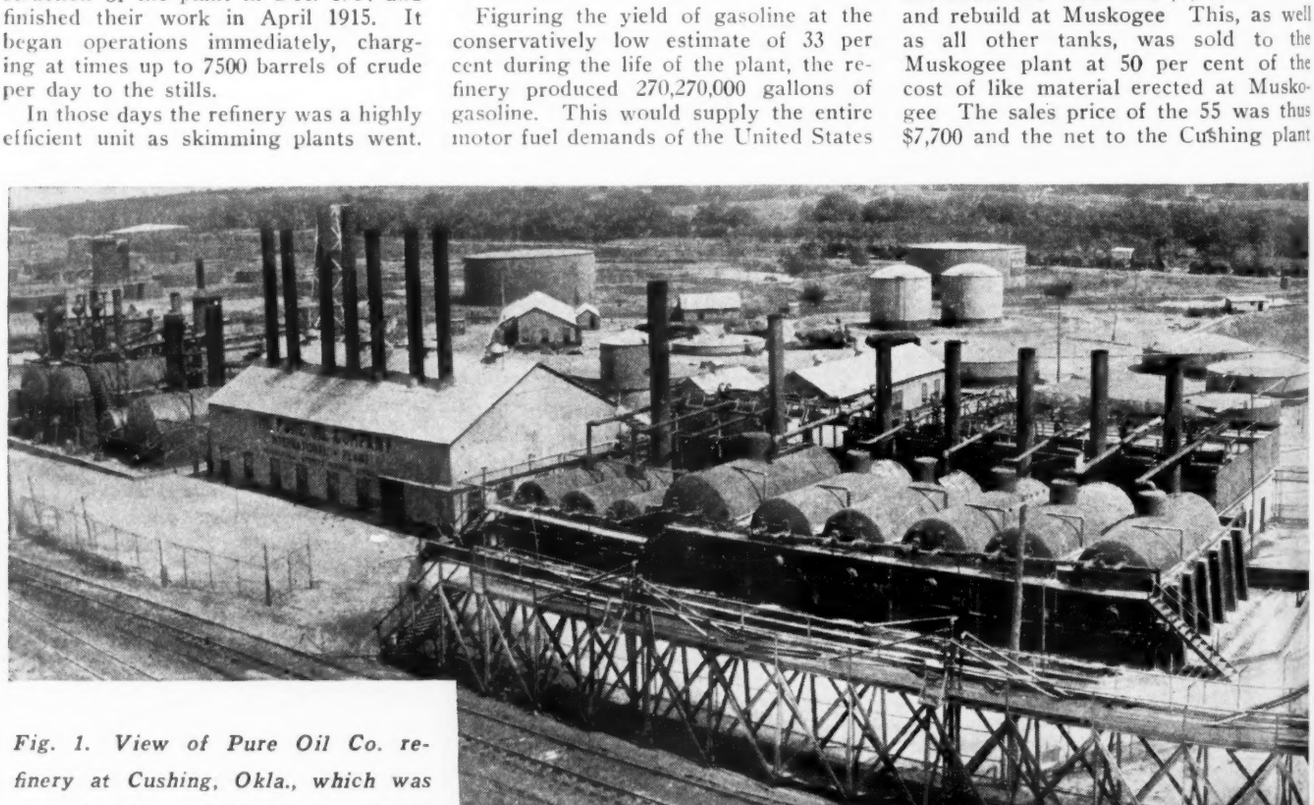


Fig. 1. View of Pure Oil Co. refinery at Cushing, Okla., which was recently dismantled after nearly 11 years service.

after all expenses was approximately $2,245.

Other tanks cut down and moved included four 2500 barrel tanks, four 5000 barrel tanks, three 1000 barrel tanks, one 3000 barrel tank, five 1800 barrel tanks, one 8000 barrel tank, one 15,000 barrel tank and two 500 barrel tanks.

25 Miles of Pipe

THE Cushing plant occupied a 12 acre site, and from that small space was recovered 20 miles of pipe ranging from 1½ to 8 inches in diameter which was in good enough condition to sell. Outside the refinery site another five miles of good pipe was dug up and sold.

In dismantling the plant workers recovered 1000 valves ranging in size from one quarter of an inch to 12 inches. Of these 750 were able to stand a cold water pressure test up to 90 pounds and were considered good enough to sell. The refinery machine shop workers went over the valves and reseated those which showed even minute leaks on the test.

The machine shop was used in reconditioning all pumps in the plant before they were shipped to the other refinery. These pumps brought 50 per cent of the cost of new material.

Of the two 8 kilowatt generators at the plant, one was sold to the producing division of the company and one to the natural gasoline division. All wiring and electric lights were carefully collected and sold.

Sheet Steel Saved

A YEAR or so ago the condenser boxes at the Cushing plant were developing leaks at the water line due to the corrosion of salt water during the long years of their service. As was described in an article in National Petroleum News about that time, the company applied expanded metal lath to the inside of these condenser boxes with the aid of a welding torch and light metal strips. With a gunnite machine the interior of the boxes was coated with concrete which made the boxes as good as new.

It was thought at the time that there would be no salvage value to the boxes after application of the concrete. But when the plant was being dismantled General Superintendent R. E. Young found that he could use some steel plate to advantage so he tried prying off the concrete interior shell with a crowbar. The concrete peeled off easily and a large amount of plate steel was recovered to help in patching tanks and for use at the Muskogee plant in covering sunken pipe conduits.

Little use has been found for the old shell stills thus far. Two were moved to Muskogee and one was taken to Ardmore. At Muskogee one was installed as a reboiler in connection with the Cross cracking plant. At Ardmore one 200 barrel still was installed at the company's refinery as a water softener. In the enlargement work at the Muskogee plant tube stills have been installed so there was no need of the old shell stills for crude. Eventually all of the old stills probably will be sold for bulk station storage of gasoline or kerosene or to some natural gasoline plant for a similar purpose.

An interesting feature of the salvaging operations was the work done in saving the lead lining of the agitators. It was thought at first that the lead could not be recovered in sheets so that it might be used again. But when workmen entered the agitators they cut down the center of the butt-straps and were able to take out the sheets whole. The old butt-straps were peeled away from the sheets and the only material expenditure in re-erecting the agitators was for new butt-straps. This one operation saved approximately 24,000 pounds of sheet lead which is valued at about 10 cents per pound.

Insulation was removed from steam lines throughout the Cushing plant and largely saved to be used again at Muskogee. To do this workmen removed the covering and destroyed it, then saved the halved pieces of insulation material. Approximately 75 per cent of all the pipe insulating material in the plant was recovered.

The company's water pump station was sold to Cushing interests as it stood. Other Cushing interests bought the superintendent's home and workers' cottages together with the lots on which they stood. Brick at all points in the plant is being sold at $8 per thousand as they stand in still settings and walls. The buyers chip off the mortar and use the brick rather than pay the present cost for new brick of about $15 per thousand.

Work of dismantling the old plant was begun on Mar. 1, just 15 days after it was shut down, and completed on June 20, with the exception noted of some brickwork and most of the shell stills which are the only monument to a refinery which produced such an enormous amount of gasoline.

August, 1926 Gasoline Consumption Gains 14% Over August, 1925

NEW YORK, Oct. 29.—Gasoline consumption in August in 33 states having gasoline tax or inspection laws, totaled 414,488,000 gallons, which is an increase of 51,368,000 gallons, or 14.1 per cent over August, 1925, according to the reports of wholesalers and dealers in various states, compiled by American Petroleum Institute.

Daily average consumption in August, 1926 was 13,371,000 gallons, as compared with 13,119,000 gallons in July, 1926, this being an increase of 1.9 per cent.

For the eight months ended August, 1926, consumption totaled 2,678,385,000 gallons, compared with 2,310,587,000 gallons for the corresponding period of 1925, showing an increase of 367,798,000 gallons, or 15.9 per cent.

Gasoline consumption by states was:

Gasoline Consumption by States, August, 1926

	July, 1926 (Gallons)	Month of Aug., 1926 (Gallons)	Aug., 1925 (Gallons)	8 Months Ending With Aug., 1926 (Gallons)	Aug., 1925 (Gallons)
Alabama	12,304,000	11,960,000	10,131,000	83,023,000	68,249,000
Arizona	2,846,000	2,774,000	2,429,000	20,832,000	18,268,000
Arkansas	8,963,000	8,973,000	8,948,000	65,734,000	58,598,000
Colorado	11,460,000	12,612,000	9,521,000	73,418,000	64,538,000
Delaware	1,819,000	2,144,000	1,828,000	12,872,000	11,613,000
District of Columbia	4,802,000	4,571,000	4,124,000	33,384,000	29,155,000
Florida	22,176,000	21,173,000	17,566,000	195,954,000	121,579,000
Georgia	13,840,000	16,130,000	12,655,000	109,457,000	91,891,000
Idaho	4,569,000	4,764,000	4,119,000	26,865,000	19,986,000
Kansas	29,270,000	25,968,000	21,053,000	163,535,000	142,962,000
Kentucky	7,947,000	9,937,000	10,984,000	62,323,000	63,958,000
Louisiana	12,181,000	12,067,000	10,145,000	86,912,000	75,475,000
Maine	9,454,000	9,843,000	8,352,000	58,441,000	57,166,000
Maryland	11,338,000	11,258,000	10,893,000	74,042,000	65,140,000
Minnesota	30,496,000	29,521,000	26,248,000	176,939,000	158,334,000
Mississippi	10,395,000	10,127,000	8,290,000	67,976,000x	54,476,000
Missouri	30,637,000	30,014,000	30,220,000	188,602,000	166,186,000
Nevada	1,158,000	1,191,000	985,000	6,984,000	6,008,000
New Hampshire	5,367,000	5,791,000	4,924,000	24,638,000	22,811,000
New Mexico	2,417,000	2,571,000	1,988,000	15,714,000	13,526,000
North Carolina	17,298,000	17,217,000	12,984,000	126,212,000	116,851,000
North Dakota	6,832,000	9,743,000	8,765,000	50,988,000	41,630,000
Oklahoma	18,800,000	20,972,000	17,051,000	135,543,000	109,173,000
Oregon	12,452,000	12,445,000	11,130,000	75,345,000	65,304,000
South Carolina	8,172,000	8,282,000	7,902,000	58,461,000	53,743,000
South Dakota	7,231,000	8,498,000	9,211,000	51,004,000	46,590,000
Texas	49,304,000	50,658,000	42,299,000	331,947,000	302,635,000
Utah	3,587,000	3,958,000	2,490,000	24,482,000	20,441,000
Vermont	3,905,000	4,086,000	3,657,000	13,708,000	16,375,000
Virginia	14,181,000	14,268,000	13,130,000	92,805,000	81,388,000
Washington	19,029,000	18,992,000	17,740,000	122,345,000	107,191,000
West Virginia	9,678,000	9,090,000	8,943,000	53,527,000	49,878,000
Wyoming	2,780,000	2,890,000	2,415,000	14,373,000	14,479,000
Total	406,688,000	414,488,000	363,120,000	2,678,385,000	2,310,587,000
Daily average	13,119,000	13,371,000	11,714,000	11,022,000	9,509,000
Increase over previous year:					
Amount	.....	51,368,000	.....	367,798,000	.....
Percentage	.....	14.1%	.....	15.9%	.....
Iowa	26,320,000	27,439,000	26,570,000	166,896,000	.....
Michigan	57,584,000	58,685,000	51,272,000	349,861,000	.....
Nebraska	15,759,000	16,114,000	14,383,000	101,978,000	.....
Ohio	71,070,000	65,605,000	61,748,000	438,083,000	.....
Rhode Island	5,696,000	5,392,000	4,966,000	33,555,000	.....
Wisconsin	32,496,000	31,970,000	28,403,000	175,890,000	.....

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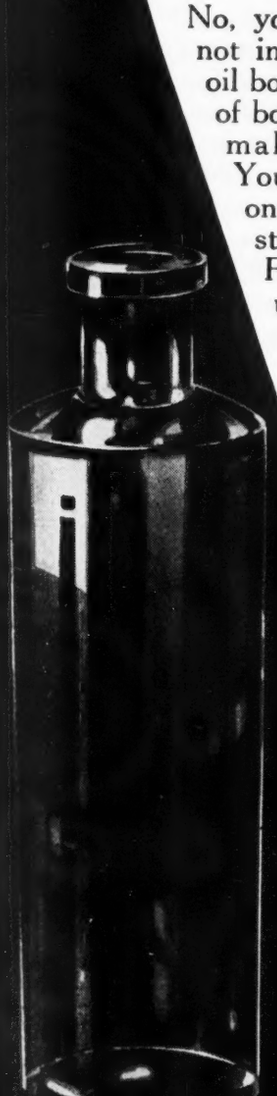
And the handsome, attractive appearance of these bottles adds that final touch of personality and quality that has made them favorites throughout the oil industry.

Sample on Request.



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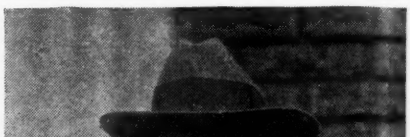
McKay Is Promoted In Pierce Organization



C. R. McKay

TULSA, Oct. 30.—C. R. McKay who on Nov. 1, becomes acting superintendent of refineries for the Pierce Petroleum Corp., begins his new duties exactly five years and one month after he joined the staff of the Pierce corporation as office manager of the manufacturing department.

Mr. McKay succeeds J. M. Wadsworth, who resigned recently to become affiliated with the Independent Oil & Gas Co.

Sixteen years experience in the oil game is back of Mr. McKay in his work. He is a native of California, having received his early education in that state. In 1911 he joined the Associated Oil Co. staff and was sent to their Gaviota, Calif. refinery where he held various positions until 1913, when he was transferred to the new refinery being built at Avon, Calif.

Mr. McKay resigned from the Associated Oil Co. staff in 1918 to become office manager for the engineering department of the Empire Refineries, Inc., at Bartlesville, Okla.

On Oct. 1, 1921 Mr. McKay joined the Pierce staff, leaving the Empire organization with J. J. Allinson who became general superintendent of refineries for Pierce. Mr. McKay was office manager for the manufacturing department of Pierce until the resignation of Mr. Allinson, who became affiliated with the Marland Refining Co., and of Mr. Wadsworth.

DUBUQUE, IA.—Quality Oil Co., which has been in business for about two months, has completed six service stations and one bulk station. Its Asbury St. station is equipped with three 10-gallon pumps and an air compressor.

The company is distributor for Quaker State motor oil and Veedol, and Tidal gasoline. Improved highways are bringing tourist trade to Dubuque, Harry Kohn, of the Quality company, says.

Outlook for 1927 in Petroleum Industry, How It Fits in General Situation

CHICAGO Nov. 1

THE American nation will not find itself stalled by the roadside, out of gasoline for its motor cars, in the time of the present generation or its children, W. F. Farish, president of the Humble Oil & Refining Co., and president of the American Petroleum Institute, said in Chicago Oct. 27.

With four other leaders in important industries, he addressed the third public conference on Education and Industry at the University of Chicago. The conference was under the auspices of the University of Chicago and the Institute of American Meat Packers.

Other addresses were by Dwight W. Morrow, member of J. P. Morgan & Co.; Fred W. Sargent, president of the Chicago & Northwestern Railroad; Ernest Robert Graham, architect, member of Graham, Anderson, Probst & White, of Chicago; and Edward S. Jordan, president of the Jordan Motor Car Co., Cleveland.

Vice-President Charles G. Dawes introduced Mr. Morrow at the afternoon session. Max Mason, president of the university of Chicago, presided at the morning meeting, and Thomas E. Wilson, chairman of the Institute Plan commission of the Institute of American Meat Packers was in charge of the afternoon program. Co-operating with the university and the meat packers in the conference was the Chicago Association of Commerce, the Commercial Club of Chicago, and the Industrial Club of Chicago.

Following Mr. Farish on the program, Mr. Graham gave an address on the building and construction industries. Mr. Graham dwelt on the developments some 40 years ago which have now made it possible to provide 30 acres of floor space on an acre of earth. Much of this was possible through use of steel, sanitation, and new ideas in beauty of building he said.

Spice of the morning program was supplied by Edward S. Jordan, the automobile manufacturer. To forestall anyone asking him the question he hears 40 times a day, that is, when will the saturation point be reached in the automobile industry? Mr. Jordan said the saturation point would be reached when everyone owned an automobile and none wore out. The automobile industry is in its infancy, Mr. Jordan said. In looking at financial returns of manufacturers he pointed out that the public should take account of the dealer who bears the brunt of changing models in trading in old cars for new ones.

Gen. Dawes, in introducing Mr. Morrow, compared the oratory of the political campaign with that of the conference. He remarked how politicians appealed to emotions and passions, while the conference speakers dealt in facts and economic situations.

That France would be out of the nightmare of fluctuating currency before the end of 1927 was a prediction made by Mr. Morrow. He stated that he expected France and Italy soon to follow the lead of Belgium in putting their money on a solid foundation. A vivid picture of the results of fluctuating currency on the continent was given by the speaker.

Mr. Sargent presented the future of transportation. He asked the public, when comparing costs of shipping on railroads as against canals, to consider that a portion of the cost of transporting goods on water was carried by the public while the railroads were contributing in taxes, and that these factors put shipping costs in a different light. He compared the Erie canal from an historical standpoint with the railroads to show that in service and ultimate cheapness the railroad was more economical. He said he believed that Great Lakes to Europe shipping would help all industries including railroads. Canals do serve a purpose in connecting great terminal centers, Mr. Sargent continued, and he thought a waterway from lower Lake Michigan down to the Mississippi river would be profitable. Motor truck transportation should be confined to short hauls in congested areas he said, and the railroads need not fear competition from the highways.

Current Supply will be Adequate in 1927

By W. S. Farish, President
American Petroleum Institute

Delivered Before University of Chicago Third Conference on Education and Industry, Oct. 27, 1926

FROM a prolonged and trying period of burdensome over-production of crude oil, which, of course, constitutes its raw material, the petroleum industry has recently passed into a position of balance, or even of slight excess of consumption over production. During the present year there has been a small draft on both crude and manufactured stocks. Stocks are still heavy, however, aggregating in crude and refined products about 517,000,000 barrels, as compared with 539,000,000 one year ago and 185,000,000 in 1918 at the close of the war.

Industry has prospered

ON the whole the industry has prospered during the past year, although it has not, even now, attained a position where, in my opinion, it can earn an adequate return on its invested capital. The constant increase in investment, which is necessary for renewals, replacements, and to maintain efficiency, together with the constantly increasing cost of crude oil production, make me doubt whether it is possible today, at the present level of prices, for the oil industry to pay to its stockholders, out of earnings, reasonable interest on their investment and, at the same time, provide from earnings the funds necessary to carry on business and meet the requirements for new investment that competition and normal efficiency demand.

It has been demonstrated that any corporation that maintains its position as a producer or refiner must constantly supply additional funds for new leases, new wells, and new production, in order to maintain the volume of production at the end of the year equal to what it was at the beginning. Similarly, in refinery work better practices, new methods, and new inventions are forcing the refiner continually to replace equipment, in order that he may manufacture his products at a cost that will permit him to sell in competition. In other words, the cost of maintaining crude production at a fixed level and the cost of replacing obsolete refining equipment and practices are so high as to consume a large proportion of reserves that ordinarily would be available for profits.

Taxation as Handicap

ONE factor which handicaps the petroleum industry in its efforts to earn fair profits, is the taxation to which it is subjected. In addition to direct ad valorem taxes, such as are assessed against property in general and against other industries, the petroleum industry, in most states, pays a special tax on every barrel of oil produced, known as the gross production tax. In many states also there is a heavy special tax on every gallon of gasoline sold; part of this tax is paid by the industry, although it is popularly assumed that the industry is able to pass it all on to the public. Moreover, the expense of col-

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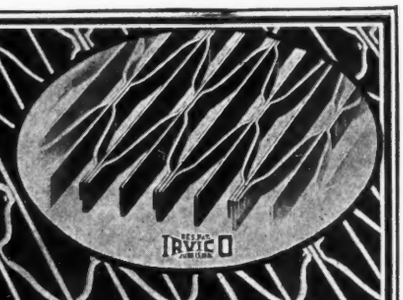

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lecting this tax is also borne by the industry. Oil companies generally pay more taxes than dividends and a number of them pay taxes double the amount of their dividends.

But the principal obstacle in the way of progress toward reasonable profits in the petroleum industry is excessive competition. Under this burden the industry literally staggers. To excessive competition is due, in large measure, the overproduction which plagued the petroleum producer and deprived him of almost all profit during the years 1921, 1922, and 1923.

Competition in producing petroleum is intense because the returns from successful discoveries are often colossal. The element of chance, and the possible large reward, make the search for oil pools just as attractive to venturesome spirits today as was the lure of California gold in 1849, and the actual cash investment of the average wildcatter is hardly more than the grubstake that the "forty-niner" required. Almost anyone can go into the producing game, therefore, and almost everyone, not otherwise gainfully occupied, does so.

Many of these small ventures are financed by stock sales to the general public, particularly those which are of too little merit to be floated within the industry. In the aggregate millions of dollars from small investors have been spent in this way, much of which was lost or squandered. The industry, in consequence, has to contend, not only with the added competition, but also with the ill-will of the public which naturally charges its unhappy experience to the industry at large.

There is a similar duplication of effort and facilities as a result of excessive competition in the refining and the marketing of gasoline and other products. The resulting waste of capital and loss of profit to the industry is heavy. Refinery capacity was overbuilt, as a result of the abnormal demand for products during and immediately following the World War. Marketing facilities were elaborated and duplicated in order to sell the output of our excess refinery capacity. Competition has led us all into giving the consumer a luxury service that is expensive and totally unwarranted.

Probably our troubles in the refining and distribution of products will show gradual improvement. There is certainly no justification for new enterprises in this end of the business and with the rapid obsolescence of old refinery equipment, we should ultimately return to balance and eliminate unnecessary duplication of marketing facilities.

Oil as Fugitive Mineral

THERE is another circumstance in American petroleum producing practice, however, which must be coupled with intense competition as part of the underlying cause of overproduction. I refer to our petroleum laws, which, recognizing that petroleum in its natural state underground is a fugitive mineral, and that it may move through its natural reservoir from one place to another, vest title to it in the owner of the surface, but do so only after the owner has reduced the oil to actual possession by bringing it to the surface through wells drilled on his land.

Many new fields are developed as a result of chance discoveries on small tracts of land. In such cases, adjacent small tracts must immediately be drilled, if their owners are to recover their fair proportion of the oil in the common reservoir.

Intense competition, then, together with our petroleum laws, make it inevitable that every discovery of oil in a region of small land subdivisions must inaugurate a feverish effort on the part of every lease owner, whether he be an individual operator or a large producing company, to produce a maximum volume of oil in a minimum time.

Wherever gusher production is obtained under these conditions local overproduction results. More wells are drilled than would be necessary if competing companies were permitted to agree to restrict drilling. Storage must be built to provide for oil which cannot be marketed and might much better remain in the ground until the market could absorb it. Sometimes expensive pipe lines are built that would not be required in the absence of competition and the resulting overproduction.

Finally, there is the extra expense of waste and inefficiency which invariably go hand in hand with haste in development. All these items of extra expense mean waste of capital, and, in the aggregate, they place an extreme burden on the industry.

The only practical method of preventing overproduction has been to reduce the price of the crude. This method is effective up to a certain point, but fails where extremely rich or extensive production is obtained, because in such cases operators are all the more frantically driven to get their oil out of the ground before a competitor captures it, and since they can still make a profit on their flush oil, low prices do not deter them.

But it may still seem strange to this audience that the petroleum industry is unable to prosper under a competitive system and to prevent overproduction as effectively as other industries do. In the first place, as has been already stated, competition is unusually intense in the petroleum industry because of the exceedingly great reward for successful exploration. New pools are discovered either by chance, or, as has happened with increasing frequency during recent years, by reason of the greatly augmented efficiency of geological methods and geophysical methods of determining correctly in advance where to drill in order to find oil.

Once discovered, the oil in the new pool must be promptly reduced to actual possession. When these discoveries result in large new pools, part of the additional oil is frequently the property of an entirely new organization or a small organization which theretofore has not been important as a producer and may have had no refinery or marketing facility at all.

In such cases the newcomer, with cheap crude, builds himself a refinery and goes out to create himself a market for his products. He has the latest refinery equipment and is generally in position to undersell ninety per cent of the competition in his territory. Transportation rates are so low that new large supplies of crude or products anywhere, at home or abroad, quickly affect our whole market structure. The existing refineries and marketing facilities cannot process this new oil or distribute the products, and it is very difficult, or even impossible, under existing laws for a competitor to absorb the new enterprise.

Laws Prevent Control

OUR laws not only prevent control of production, but they make impossible the sale of existing refineries or the transfer of marketing facilities. In no other industry can new supplies so quickly and completely overturn the market structure.

Even the Federal Government, itself has contributed to the dilemma by insisting that lease ownership on Indian Land, or other Federal land, shall be divided into small units, so that competitive drilling must follow any discovery. Both federal and state laws preclude agreements between operators to control production, although a really healthy condition of the industry in the matter of petroleum reserves at home, and of finances to acquire properties abroad and to meet foreign competition, seem to me to demand relief from these restrictions.

As long as these conditions persist, as long as these laws are unmodified, wasteful drilling and overproduction, excess refining capacity, and duplicated mar-

Increase In Consumption

"THE consumption of gasoline within the United States, for example, is now more than fifteen times greater than it was in 1913," said Mr. Farish, "yet the price per gallon is now only seventy-five per cent of the 1913 price allowing for the change in the purchasing value of our dollar. The relative cost of gasoline from 1913 to 1925 is shown in the following table:"

Year	Exchange Value: Gal.-Cents
1913	16.8
1914	14.7
1915	13.7
1916	18.1
1917	13.4
1918	12.5
1919	11.9
1920	13.0
1921	17.8
1922	16.9
1923	13.5
1924	12.0
1925	12.1

keting facilities are inevitable, and no real conservation is possible.

Conservation Commission's Work

THE intense competition in producing oil and the resulting overproduction of oil received most of the study recently devoted to petroleum by President Coolidge's Conservation Commission. This Commission, which consists of the Secretaries of War, Navy, Interior, and Commerce, concluded that overproduction, resulting from the causes above specified, constitutes at once the principal item of waste and the greatest obstacle to effective conservation within the industry.

* * *

The Conservation Commission recommends a policy of conservation through cooperation between government and industry and between different units within the industry, which every oil man will approve. To quote the language of the Report:

"The major part of the measures that must be taken to protect our future supplies must rest upon the normal commercial initiative of private enterprise. The field for governmental action is considerable, but to formulate the broader bylaws of the industry in the sense of conservation and to concentrate thought upon them, is the major part of the Board's task in cooperation with the industry."

Every oil man will gladly dedicate himself to conservation in this sense. It has always been the dream and ambition of every producer to own or control an entire pool by himself, so that he could regulate his drilling program solely on the value of his product and the demand for it on the market, without the necessity of hastening to produce his oil before it escaped into the well and storage tank of a competitor. Every producer, in other words, would like to drill no unnecessary well and to produce his oil no faster than the normal market can absorb it.

In the face of this situation it is refreshing and encouraging to hear the Conservation Commission approve, in principle, agreements between operators to curtail drilling, and even to suggest a modification of our anti-trust laws which will permit such agreements.

Equally salutary is their recommendation that requirements in federal leases be changed to permit the unit operation of individual pools, with the consequent elimination of unnecessary drilling. These are first steps in the direction of the only possible solution of a problem that is of paramount importance to our Nation as well as our industry.

Heretofore, the industry itself has hardly been in position to take the initiative in an effort to modify the laws against combinations and control of production, which have rendered it helpless in the face of its problems. Leadership, the lack of which I have deplored so strongly, has been impossible. Any concerted move in this direction on the part of the industry would have aroused suspicion of ulterior motives and would have rendered its object more difficult of attainment.

Conditions Fundamentally Improved

BUT with the recent expression from the Conservation Commission, the condition seems to be fundamentally improved. Further education, both within the industry and outside of it, as to our real problems, seems likely to make possible coordinated effort within the industry, and a more tolerant and liberal attitude on the part of our government. Once assured of these, I am fully confident that we can work out our problems, and become, in fact, the unified, well-directed industrial power that, in the interest of national welfare, we ought to be.

Looking Into the Future

THE immediate future—next year, the year after, and possibly the following year—will see the normal development of our oil fields—proven, semi-proven, and prospective—supplying current demand adequately, without material reduction of our rather heavy stocks. In other words, always barring general industrial depression, over this period the oil industry will function about as it has this year; profits generally that permit us to live, large profits nowhere, and on the whole less profit than a thoroughly healthy industry should enjoy.

At times, due to the rapid development of new pools, we will have an over supply, with crude and perhaps products going to storage. Such conditions will be reflected in the market value of our products. At other times we will be drawing on stocks of crude and products, and this condition will, in turn, be reflected in the market value of crude and products.

Looking further ahead, over the next decade, or the next generation, or the next century, I personally continue to see adequate supplies of motor fuel for generation after generation. I am one of a number in the petroleum industry which holds that our supply of well oil itself will continue adequately to meet the essential requirements (by essential requirements I mean motor fuel and lubricants) of our Nation for generations. I believe it will also remain the cheapest source of these products.

But, if I prove to be mistaken, if well oil fails in the future to constitute an ample supply, or if it becomes an expensive supply, we are certainly already in position to rest assured that we can make a motor fuel similar to gasoline from raw materials such as oil shale and coal which are available to us in almost unlimited quantities.

Oil shale is already a thoroughly established source of motor fuel and lubricants. In Germany, brown coal has also been processed to yield a motor fuel on a large scale. It is my firm conviction that these practices will be placed on sound commercial basis, just as soon as gasoline prices advance to any point materially higher than our prevailing average at present.

If gasoline from well oil becomes expensive, this substitute fuel will come into use. There is no possibility, then, of our supply failing. There is only the question as to when and at what prices other fuels than gasoline from well oil will be utilized. Well oil supplies cannot fail suddenly. As yet, of course, the whole tendency is toward increase, but when the supply does begin to dwindle, as eventually it must, the decrease will be extremely gradual, and at that time, equally gradually, other motor fuels will begin to come into the market to supplement the gasoline supply.

America's Motoring Bill

THE annual motoring bill of the American public is twelve billion dollars. Only fifteen per cent of this is spent for fuel. We could pay considerably more per unit volume for fuel, therefore, without profoundly disturbing the total of our motoring expense. In the past, the motorist has demanded and paid for power and flexibility. In the future he may demand fuel economy instead. If he does so, he will get it. He can distribute the twelve billions of dollars of total motor expense almost any way he chooses among the different items that make up that total. His position is precisely that of the man, who, in deciding to spend $10,000 to build a new house, debates whether he shall put part of the cost into an extra bath room, or an enlarged porch.

Up to the present no one has ever been deterred from buying a car because of the expense of fuel for it. Fuel has not, as a matter of fact, been worth saving. So small a thing as careful carburetor adjustment, which will effect considerable economies in fuel consumption, is generally ignored as not worth the trouble.

Even with higher unit costs for fuel, should they ever come, the average motorist may not have to meet any increase in his motoring bill. Fuel economies, motor efficiencies, useful life of automobiles, all will be so improved as to compensate or even over-balance increases in fuel costs.

Do not concern yourself, therefore, lest our motor fuel be exhausted. Such a contingency is not within the realm of probabilities. Do not even be alarmed lest the price go up, because motor fuel makes every promise that it will never permanently become a much larger part of the cost of motoring than it is today. You will gather, then, that my answer to the question, "Must the people of America learn to walk again?" might very well be: Walking is all very good and excellent exercise, but neither you, nor I, nor our children, will ever get much good from it if we wait to do our walking until the nation's gas tank has gone dry.

FRANKLINVILLE, N. Y.—The Hunt Chevrolet Co. here has completed a gasoline service station, handling Emco gasoline, of the Emery Manufacturing Co., Bradford, Pa.

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Collett, for Fifth Time, Heads Texas Division, Mid-Continent Association

By Paul Wagner
N. P. N. Staff Writer

DALLAS, Oct. 30

PRESIDENT J. D. Collett of Fort Worth was elected to pilot the destinies of the Texas division of the Mid-Continent Oil & Gas Association for the fifth consecutive term at the annual meeting held in Dallas yesterday.

Other officers elected to serve with him included the following vice presidents: W. B. Pyron, of Houston, third vice president of the Gulf Production Co.; R. S. Haseltine of Dallas, general manager of the Guiberson Corp.; Roy B. Jones of Wichita Falls, president of the Panhandle Refining Co.; W. B. Hamilton of Wichita Falls; W. P. Gage of Dallas; J. C. Wilson of Beaumont, a principal in the Wilson-Broach Oil Co.; Adrian C. Moore, division manager at Houston of the Rycade Oil Corp.

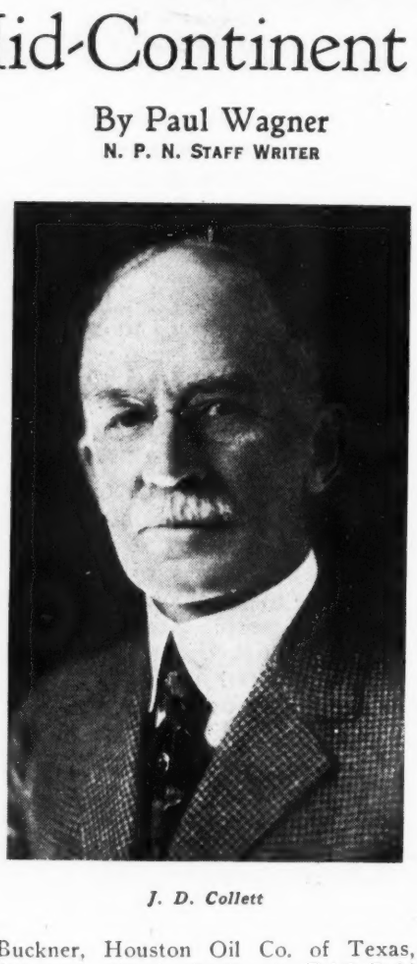
W. M. Massie of Fort Worth was re-elected treasurer of the Texas division and Joe P. Laney of Dallas was again named secretary.

Members of the executive committee were, for the most part, re-elected. K. C. Baker of the United North & South Oil Co., Luling, was named in place of its president, Edgar B. Davis, who no longer spends much of his time in Texas. R. M. Putnam, representing the Union Oil Co. of California, was removed from the executive committee list as he has now been transferred out of Texas. I. G Harmon, vice president of the Marland Oil Co. of Texas at Fort Worth, succeeds F. Park Geyer, president, now of Ponca City, Okla.

New names added to the executive committee list include T. J. Fitch of the Magnolia Petroleum Co., Dallas; E. H. Edelman, Continental Oil Co. of Texas, Wichita Falls; Herman Marsh, Amerada Petroleum Corp., Fort Worth; Truitt, Cranfill and R. R. Penn, Independent operators of Dallas; W. R. Mitchell, pipeline contractor of San Antonio; A. B. Smith of the Pandem Oil Co., Wichita Falls; Jack Dies of the Humble Oil & Refining Co., Houston; Underwood Nazro, second vice president of the Gulf Production Co., Houston; J. K. Hughes of the J. K. Hughes Developing Co., Mexia; W. B. Sutton of the Vacuum Oil Co., Houston; Charles Fitzpatrick of the Pure Oil Pipeline Co., Dallas; and R. L. Dudley of the Gulf Publishing Co., Houston.

Old Members Re-elected

EXECUTIVE committee members re-elected were as follows: E. H. Bium, Atlantic Oil Producing Co., Dallas, J. S. Bridwell, City National bank bldg., Wichita Falls; Bert Broday, Humble Oil & Refining Co., Wichita Falls; Lee Bivins, Amarillo; E. H. Buckner, Houston Oil Co. of Texas, Houston; A. I. Brainard, Frick-Reid Supply Co., Houston; C. C. Cartwright, National Supply Co., Fort Worth; W. D. Cline, Wichita Falls; J. D. Collett, Fort Worth; R. A. Crawford, Lone Star Gas Co., Dallas; Frank Cullinan, Republic Production Co., Dallas.



J. D. Collett

John Crotty, Republic Supply Co., Houston; F. W. DeWolf, the Humphreys Corp., Houston; W. H. Francis, Magnolia Petroleum Co., Dallas; W. P Gage, Dallas; W. B. Hamilton, Wichita Falls; Harry C. Hanszen, Houston; R. S. Haseltine, the Guiberson Corp., Dallas; T. B. Hoffer, Hoffer Oil Corp., Fort Worth; B. N. Honea, Star-Telegram, Fort Worth.

Roy B. Jones, Panhandle Refining. Co., Wichita Falls; J. A. Kemp, Wichita Falls; Fred M. Lege, Jr.. Magnolia Gas Co., Houston; Capt. J. F. Lucey, Lucey Petroleum Corp., Dallas; J. B. McCabe, Municipal Gas Co., Dallas; J. C. McCue, The Texas Co., Houston; J. L. McMahon, The Texas Co., Wichita Falls; C. B. McKinney, Houston Pipeline Co., Houston.

W. M. Massie, Fort Worth; W. A. Moncrief, Marland Oil Co. of Texas, Fort Worth; J. M. Mouser, Prairie Oil & Gas Co., Eastland; Edward T. Moore, Simms Oil Co., Dallas; Harry J. Morlang, Oilwell Supply Co., Fort Worth; J. Robey Penn, Texas Pacific Coal & Oil Co., Fort Worth; J. Edgar Pew, Sun Oil Co., Dallas; W. M. Priddy, Wichita Falls.

D. C. Proctor, Gulf Production Co., Houston; W. B. Pyron, Gulf Production Co., Houston; J. D. Sandefer, Walker-Caldwell Producing Co., Dallas; Frank M. Smith, Oriental Oil Co., Dallas; Levi Smith, Big Lake Oil Co., Texon; John R. Suman, Rio Bravo Oil Co., Houston; B. S. SoRelle, Pure Oil Co., Mexia; F. L. Thomson, Grayburg Oil Co., San Antonio; John C. Townes, Humble Oil & Refining Co., Houston; Joseph M. Weaver, States Oil Corp., Eastland.

J. C. Wilson, Wilson-Broach Oil Co., Beaumont; C. L. Witherspoon, Witherspoon Oil Co., San Antonio; G. Clint Wood, Wichita Falls; Ed F. Woodward, Republic Production Co., Houston.

Tribute Paid A. B. Steen

THE association, upon motion of J. Edgar Pew of the Sun Oil Co., voted to have President Collett appoint a committee to frame suitable resolutions on the death of A. B. Steen, chief engineer of the producing department of the Texas Co., who had succumbed Thursday night to a heart attack at his home in Houston.

Both Mr. Pew and Mr. Collett paid fitting tribute to Mr. Steen for his ability and for the work he had done in the last few years as national chairman of the boiler code committee engaged in American Petroleum Institute standardization work.

President Collett appointed Mr. Pew, W. H. Francis of the Magnolia and Frank Cullinan of the Republic to prepare resolutions. This committee was also instructed to prepare resolutions on the death of the late Fred B. Tough, formerly chief of the United States Bureau of Mines and more recently general superintendent of the Humphreys Corp., whose splendid work and character the association recognized, even though Mr. Tough was not a member of the Texas division.

Technical Sessions Proposed

A PROPOSAL was made by John R. Suman of the Rio Bravo Oil Co., Houston, looking toward the holding of a technical meeting in Texas next spring similar to the session recently held at Tulsa, in which other organizations cooperated with the American Institute of Mining & Metallurgical Engineers in discussions of field methods and technical problems.

It was agreed by those who took part in the discussion that the work is not only desirable but necessary, the only question being with regard to the

machinery of handling. Roy B. Jones of the Panhandle Refining Co. agreed with Mr. Suman that this type of meeting should be regional, so as to permit the largest attendance possible of field sperintendents and lease foremen.

R. S. Haseltine of the Guiberson Corp. told of benefits from experience meetings held in the old Coalinga field, in California, in 1910, when co-operative effort helped materially to solve development and producing problems. W. B. Pyron of the Gulf Production Co. heartily agreed on the benefits to be derived, but suggested working out the plan in such manner as to cut down duplication of effort in the interest of economy of time and money.

J. Elmer Thomas, consulting geologist of Fort Worth, quoted American Petroleum Institute officials as favoring the development of field technology through the Institute, which already has taken steps in the direction of discussing at its Tulsa meeting the best practice in use of equipment and materials affected by its standardization program. F. W. DeWolf of the Humphreys Corp. referred to the work already done by the American Institute of Mining & Metallurgical Engineers.

Former President Pew of the Institute, who felt the plan ought to be worked out under sponsorship of the A. P. I., presented a motion, which was carried, authorizing the president of the Mid-Continent Oil & Gas Association to take up the question at the Tulsa meeting of the A. P. I., in December. As the situation rested the plan appeared to embrace the probable sponsorship of regional meetings under sponsorship of the A. P. I., possibly in co-operation with the various branches of the Mid-Continent Oil & Gas Association and the A. I. M. M. E.

Texas Production Gaining

PRESIDENT COLLETT in his annual address referred to Texas as now occupying second place among oil producing states and soon, probably, to take first rank through the further development of the west Texas and Panhandle regions. He said he does not subscribe to the fear of an oil shortage at any time in the near future.

Mr. Collett noted an improvement in the public's attitude toward the petroleum industry and mentioned especially the public relations work of the American Petroleum Institute, which is now in the hands of a department headed by Judson C. Welliver. He found encouraging a statement made at Tulsa by Secretary Hoover of the Department of Commerce favoring curtailment agreements in times of overproduction as a conservation movement.

Elimination of minor wastes, which have been and are being corrected, Mr. Collett said, fails to come within the scope of conservation in its true meaning; improved drilling, producing and storage methods, he said, spell true conservation. Also, he declared the refiner is helping conservation by getting more products out of each barrel of crude run to stills.

Mr. Collett referred to the evils of taxation, mentioning that in certain states the gasoline tax amounts to virtually 50 per cent of the wholesale value of motor fuel. He decried such a condition, especially where governments are using such taxes to make permanent improvements out of current funds.

Seen & Heard at Texas Division Meeting

Roy B. Jones of the Panhandle Refining Co., realizing more and more the wisdom of his and Walter Cline's sale of Dial and Whittenburg ranch acreage in the Texas Panhandle to the Gulf Production Co., last spring . . . Walter B. Pyron, third vice president of the Gulf, whose company can now dvelop the McElroy pool on the Crane-Upton county line as a unit after buying out "Bill" Dunning, the only other holder of acreage inside its 27-section block . . . J. Edgar Pew suggesting the Texas division take enough off President Collett's salary to give Joe Laney an increase in appreciation of his secretarial work . . . W. Paul Gage back from a world tour and carrying a new cane . . . Carl A. Young, A.P.I. Standardization director, finding his listeners always interested . . . John R. Suman of the Rio Bravo announcing his intention of going to California for the annual clash of Stanford with the University of California . . . F. L. Chase of the Lone Star Gas Co. talking things over with Clint Wood of Wichita Falls . . . J. Elmer Thomas getting funny with Adrian Moore of the Rycade and R. R. Mizell of the Sun . . . W. C. Thomas of the Vacuum at Houston and N. .G. Guiberson of Dallas, who last saw each other at Goose Creek . . . R. A. Wilson of the Guiberson Corp., looking out the window to see if the weather threatens the afternoon golf game scheduled . . . Edward T. Moore of the Simms company who used to be a traction executive, discussing pertinent affairs with President Collett and Roy Jones . . . Harry Morlang of the Oilwell Supply Co. at Fort Worth dapper as ever . . . "Bob" Whitehead, chief geologist of the Atlantic Oil Producing Co., tolerantly listening to J. Elmer Thomas' explanation of "why gentlemen prefer blondes." . . . G. S. Richmond of the Continental Supply Co., Corsicana, being mistaken again for Ray Richmond of the Humble.

Johnson O. & R. Directors Visit Oklahoma Fields

Staff Special

TULSA, Nov. 1. — Directors of the Johnson Oil & Refining Co. made their annual inspection of the company's properties at Cleveland, Okla., and vicinity on Oct. 29. Division managers and heads of various departments of the company arrived at Cleveland, Okla., with the directors on a special car Saturday morning, having left Chicago the previous noon.

L. Ralph Johnson, vice president of the company in charge of Oklahoma operations, met the visitors with automobiles and took them on a tour of the refinery at Cleveland, the pipe line system and to the new water plant which has been completed during the last year.

At Walter Lassert's 7L ranch near Hominy the visitors were served a cowboy lunch and entertained with a rodeo directed by Gene Mullendore. A number of Osage Indians were at the ranch at the time. The Cleveland High School band likewise helped entertain.

A banquet at Cleveland closed the day and the party left at midnight on the return trip. Those in the group were: Homer H. Johnson, president, Ed Dunn, James J. Johnson, I. H. Johnson, Fred Swan, G. C. Lilly, George B. Williams, A. W. Alsen, C. L. Baker, Grafton Houston, L. C. Denning, Frank Anderson, H. R. Hartley, Joe Horton, Ralph Lilly, H. A. Jones, C. H. Hyler, George Mindeman and Henry Plane. John Haggenjos, manager of the Tulsa office, left Friday to join the party at Cleveland.

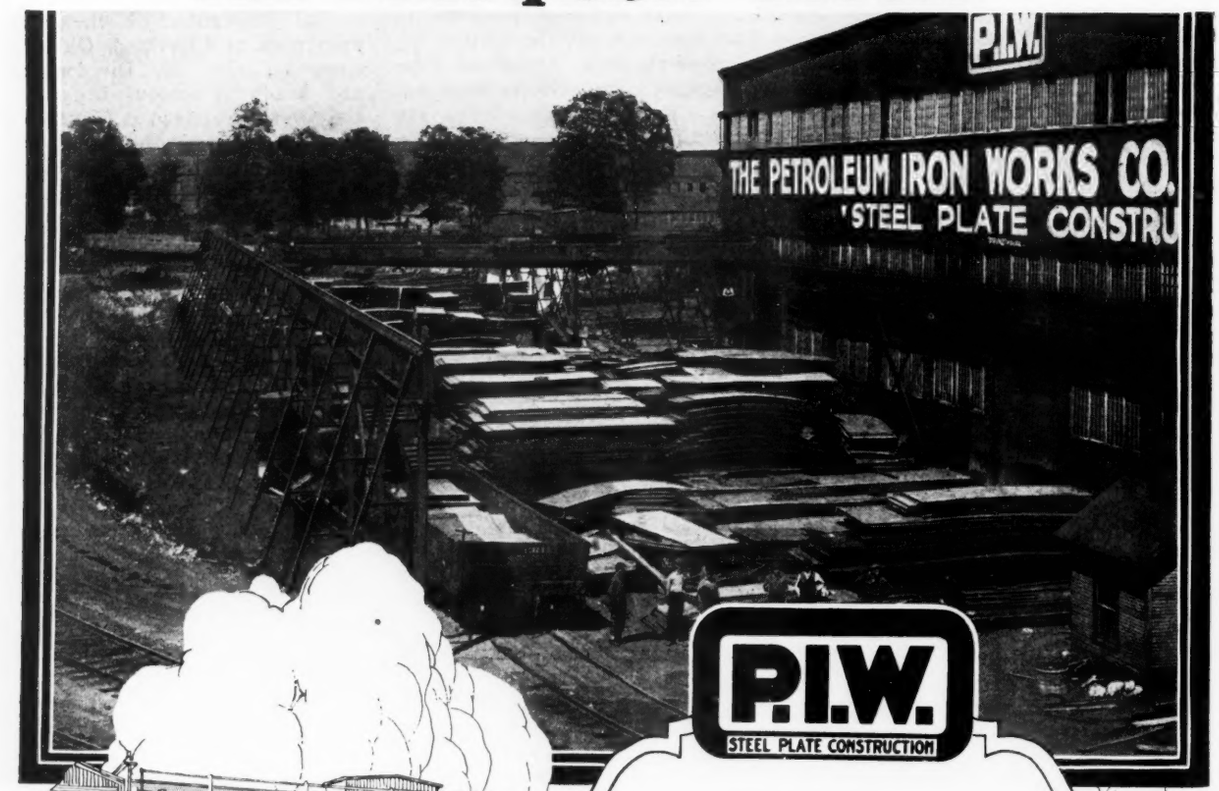
Burke Declines To Rule In Gas Controversy

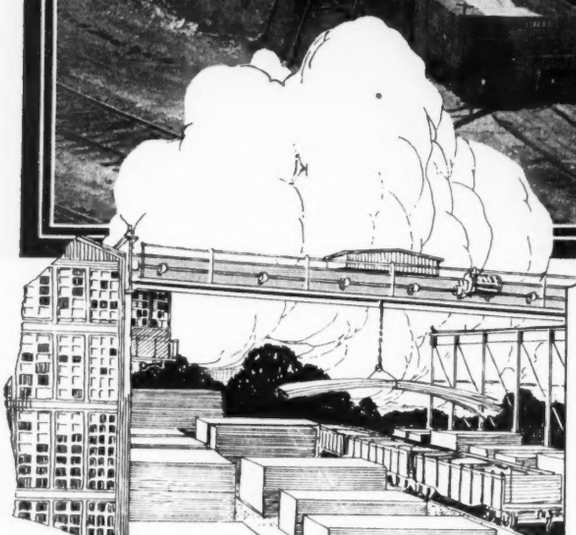
TULSA, Nov. 1.—Charles H. Burke, commissioner of Indian affairs, has declined to issue regulations covering the use of compressed air, gas or other substances to increase oil production in the Osage nation. He has declined likewise to construe the present leases held by oil and gas interests in an effort to settle the controversy as to which lessee owns residue casinghead gas.

In a letter to J. George Wright, superintendent of the Osage agency, Commissioner Burke has pointed out that no matter what position the department might take in the matter it is sure to be made the subject of litigation. He indicated that the best solution of the difficulty would be a test suit.

In the Osage nation land is leased separately for oil and gas production. Oil producers claim the right to use residue casinghead gas in their wells while gas lessees assert that such use is not authorized under the lease form and are asking payment for the gas. A third angle in the dispute is the fact that natural gasoline manufacturers are against the use of compressed air in wells claiming that it would reduce gasoline content of the gas.

An Adequate Stock





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Vibration Proposed for Drilling And Increasing Yields

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, Nov. 1

VIBRATION methods to be employed in deep well drilling and in the recovery of oil from depleted sands, as patented by a Houston inventor, involve differing applications of a wave transmission principle.

The drilling method employs only the addition of vibration to the bit of the usual hydraulic rotary system, the vibrations being caused by rapid "water hammers" in the drill stem. It is claimed for this method that it will effect great savings in wear and tear on rotary equipment, that it will lessen the cost of drilling and that it will shorten the time required to drill wells.

In the recovery system trains of suitably sustained vibration are used to liberate oil from the faces of the interstices in the sand; these vibratory forces being described as overcoming the resistance of adhesion of oil to the solids and also as overcoming the film and frictional resistances in the oil sand.

Charles R. Edwards, inventor of the two processes, has been joined by Tracy T. Word, of the T. T. Word Supply Co., in the formation of the Houston Engineers, Inc., which will market the systems under license to the petroleum industry. Mr. Edwards is president of the company and Mr. Word is secretary-treasurer.

A vibration generator, which will be adaptable for use with either system with slight changes, is in course of construction prior to being placed on the market. The drilling process, according to Mr. Edwards, will cost approximately $2100 to add to a rotary outfit. The cost of the recovery system will vary under different conditions, but is described as inexpensive to install.

Plans have not been developed in their entirety with regard to the licensing of the processes, but Mr. Edwards says he probably will put out the drilling method on a footage basis; also that he will be satisfied with a royalty on the use of the recovery system.

Rock Drill Principle Applied

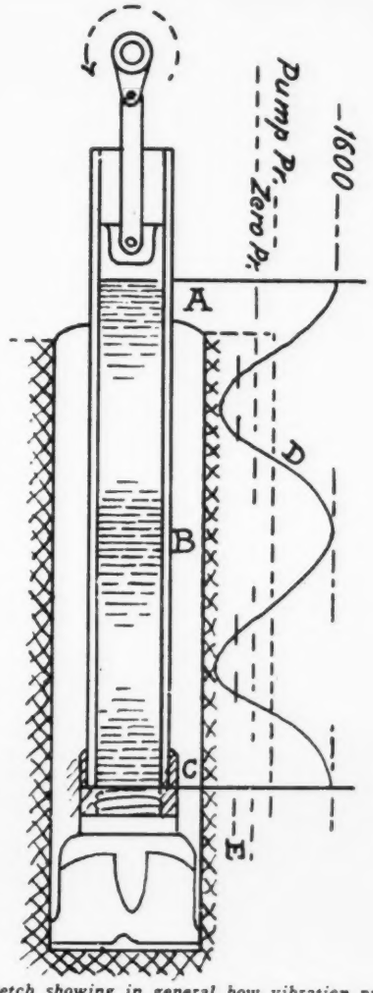
EVERY engineer knows that the harder formations encountered in well drilling yield to penetration faster and easier if the drilling bit is rapidly impinged on the high points at the bottom of the hole. Miners and quarry men have long made use of this recognized principle by slightly turning their drill after every blow struck on it. Engineers and designers have tried various schemes to apply vibration to a rotating bit in well drilling, only to give up because of complications.

Mr. Edwards' method employs the elasticity of the rotary drill stem for rapidly vibrating up and down against the bottom of the hole the bit and a part of the lower end of the drill stem. The vibrations, described as usually less than 5,000 per minute, are caused by rapid "water hammers" in the drill stem.

Anyone who understands electricity, says Mr. Edwards, will readily understand the transmission of energy by this method; continuous current electricity is current flowing one way only like water flowing in a pipe or the usual hydraulic power. This so-called water hammer transmission of energy, he describes as being very analagous to alternating current electricity, being a surging to and fro about a mean point.

Explanation of Sketch

MR. EDWARDS calls attention to the accompanying rough sketch, which may be taken to represent a rotary drill stem with an ordinary fishtail bit at the lower end. In the upper end of this drill stem is shown, for the sake of illustration only, a piston and means for reciprocating the piston. This is not the usual arrangement in actual practice, but is shown here to explain the principle of the Edwards system.



Sketch showing in general how vibration principle works.

The piston and other parts, including the driver, are in practice located on the pump platform and are brought into or out of action by a single control; and if out of action drilling by the usual rotary process may be carried on.

"Suppose now," says Mr. Edwards, "that the bit is in position to drill and just about touches the bottom of the hole, also that the mud pump and rotary are running. We will now start the vibration engine connected to the crank shaft shown at the upper end of the sketch, so as to reciprocate the piston very rapidly.

"On the first quick down stroke of the piston the column of drilling fluid next to the piston at A, will be forced downward. If this stroke is quick enough, no extra pressure or other effect will be registered at that precise instant in the fluid column at some little distance down the drill stem; but the elasticity of the fluid will receive the shock and a distinct 'clinking' sound will pass down the fluid column, very similar in nature to the 'clinking' often heard along a pipe line. This 'clinking' sound is in fact a sound wave and it travels at nearly a mile a second in the drilling fluid.

Sound Waves

"NOW let us suppose that when this first 'clinking' sound or sound wave reached the point B, in the drill stem that the crank has made another revolution and a new sound wave is just starting from the piston at A. If now a third revolution of the crank be made the first sound wave will be at C, and will at this exact instant be impinging on the top of the bit with exactly the same force that the piston was forced downward on the first stroke, less some slight losses of transmission.

"This sound wave, striking on the top of the bit is a so-called water-hammer, and the longitudinal elasticity of the lower part of the drill stem will permit the bit to make a very quick intense downward stroke. If the following sound waves are rightly timed the elasticity of the drill stem will now lift the bit up so that the next sound wave or water hammer will strike after the bit has reached its highest point and at such a time that the echo, or reflected

sound waves, will synchronize with the originating sound waves.

"This idea of transmitting sound waves through a tube is not new, but well known to pipe line operators since almost the first water works pipe lines were laid or a pump speeded up too fast without large air chambers to cushion these so-called water hammers or knocks.

Little Extra Equipment

IT will be noted from the preceding that our present hydraulic rotary system includes nearly all the equipment required with the Edwards system; that no more helpers or drillers are needed with the new system and that the extra equipment for deep well drilling consists of the following:

(1.)—"High speed engine or other variable speed motor of 125 or more horse-power.

(2.)—"A hydraulic vibration generator suitably connected to above engine.

(3.)—"A simple wave choke placed in the stand pipe from the mud pumps to protect the pumps.

(4.)—"A jointed pipe or extra heavy metallic hose instead of present rubber drilling hose to the swivel (rubber hose not suitable).

(5.)—"Large hole tool joints (similar to present collapsible bit tool joints).

(6.)—"Necessary piping.

"It is quite probable", says Mr. Edwards, "that very little extra steam will be required as the load on the drilling engine will be greatly reduced, as also will be the load on the pumps.

"In any event the total power and time required to drill a well under average Mid-Continent conditions will be less than 15 per cent of present requirements."

Details of Recovery Methods

"MANY times vibration and jarring attending the cleaning out of an old well have very greatly assisted to free some of the oil remaining in the sands and to increase production," says Mr. Edwards in referring to his recovery method for depleted fields.

The process utilizes present equipment, including pumping outfits, the Edwards system requiring only the installation of a vibration generator and means for transferring the vibrations into the oil sand stratum. All of the mechanical details, which are described as simple, have not been made public.

In the Edwards process, its inventor introduces a vibration wave into the pay stratum through one or more wells on a lease. After spreading out the wave rebounds and then swings back and forth after the manner of a pendulum or perhaps travels after the fashion of an alternating electrical current.

"It is a well known fact to physicists," says Mr. Edwards, "that the kind of vibration waves used in the Edwards process of oil recovery travel at different rates of speeds in various mediums; for instance, the rate of travel in the atmosphere is about 1080 feet per second, in water about 4800 feet per second and still faster in most solids, being more than 15,000 feet per second in some solids.

"It is also well known by physicists that the amplitude of oscillation caused by vibration waves of the same intensity vary with the medium, usually the amplitude being greater in that medium in which the rate of travel of the vibration wave is the slower. In the Edwards vibration process advantage is taken of these phenomena of nature.

"Oil is almost invariably found associated with solids, usually rocks or sands so compacted and held together that this sand may be treated practically as a solid. And since the rate of travel of vibration waves in oil is much slower than in solids it follows that if suitable trains of vibration waves originating at some common point be directed through the remaining oil and oil bearing stratum, there will be zones in which the particles of oil will be vibrated in a direction opposite to the direction of vibration of the particles composing the oil bearing stratum.

Effects of Oscillation

"THE amplitude of oscillation in crude oil caused by the vibration wave being much greater than the amplitude in the solids of the oil bearing stratum it follows that the oil will be caused to oscillate back and forth through the interstices in the oil bearing stratum.

"Therefore, there will be an oscillation of the oil in the interstices of the oil bearing stratum over the entire area penetrated by the vibration waves. The oscillation being much greater in certain zones for each vibration wave interval, (and as the vibration wave interval can be varied by increasing or decreasing the time interval between vibration waves) every part of the oil in the stratum within the range of the vibration wave generator can be very vigorously vibrated, so as to completely overcome all resistance caused by adherence, friction or any other force tending to hold back oil from the well.

"Obviously the actual displacement of any particle will be very small for each vibration wave, but if the vibration waves are very rapid and continue for a long enough period of time, the sum of the total displacements will exceed the distance from any point in a given field to the well. This does not mean that a given particle of the solid strata is transported to some other point in the field any more than the vibrating rim of a ringing bell is carried to some new point, although the total distance a given point on the rim of the bell moves may exceed many feet for a single use of the bell.

"If intruding water is present in some part of a stratum it is very evident that if the water and oil are vibrated back and forth past particles of the stratum that in time the oil film on each particle beyond the line of water advance will be broken by the force of these vibration waves. A water film will wet each such particle, permitting the oil to form migratory drops that are assisted to move by the continuing vibrations. This action tends to drive the oil out of the sand particles also."

Third Deep Pay Found In Spindletop Dome

Staff Special—By Telegraph

HOUSTON, TEX., Oct. 31.—The discovery well of a third deep pay offside the Spindletop salt dome was drilled in Friday, Oct. 13 by the Yount-Lee Oil Co. of Beaumont, making approximately 7000 barrels daily of 32 gravity oil through three-quarter inch choker. Its open flow capabilities are measurably greater. The well, which is number nine on the Yount-Lee 10-acre fee tract on the west side of the dome, is producing at total depth of 5157 feet.

Main development offside the Spindletop salt dome on the south and west has been in pay ranging from 2750 to 3225 feet below the surface. Wells in this zone have twice brought Spindletop production above the 100,000 barrel daily mark in the last few months.

An undeveloped intermediate pay level was penetrated in wells of the Gulf Production Co. on the Weed tract and the Yount-Lee interests on the McFadden at about 4300 and 4100 feet respectively. Each of these wells came in for 2000 to 4000 barrels daily, but development of the second pay zone has been held back because of the sustained production in the first zone and the thickness of shallower wells in the intensely drilled area where they are located.

Similar conditions will retard development of the 5100 foot production, but the deepening of wells from upper zones will follow the decline of the last mentioned.

Under conditions now foreseen for Spindletop, this historic Gulf coastal salt dome may be expected to approximately maintain or exceed its present production of about 85,000 barrels daily for months to come. The dip of sands away from the salt core may result in the extension of the producing territory farther away from the Dome, but as yet deep wells have not actually added any new producing area.

WINSTON SALEM, N. C.—F. D. Hendricks, who has been for five years manager of the American Oil Co. here, has sold his interests in the company to J. T. Barnes, Jr., and R. E. Taylor. Mr. Hendricks is now operating a General cord tire service station here.

Officers of the American Oil Co. now are: R. E. Lasater, president; Mr. Barnes, secretary and treasurer, and Mr. Taylor, manager.

The company has installed a new storage tank to handle another grade of fuel oil.

Standard of California Seems To Dominate Contact Filtering

By Paul Truesdell

N. P. N. Staff Writer

CLEVELAND, Oct. 30

TWO recent developments, it would appear, have brought practically all the important patents on all phases of contact filtering of lubricating oils as now practiced, into the hands of the Standard Oil Co. of California. These two developments are, first, the winning by the Standard of an interference suit in the patent office against the General Petroleum Corp. and Paul W. Prutzman, and second, the purchase by the Standard of 10 patents owned by James W. Weir, manager of the Ventura refinery of the California Petroleum Corp., and John C. Black.

The Prutzman patent on which the interference arose was No. 1,397,113, issued to him Nov. 15, 1921 and by him assigned to the General Petroleum Corp. The patent purported to cover the manufacture of a mudded mass of filtering material from montmorillonite or similar clays and its use in the decolorizing of oil.

The Standard claimed that applications filed by its technologists prior to Prutzman's filing, broadly covered the grounds on which his patent was issued. This contention of the Standard was upheld in the decision in the interference suit, so the Standard now controls that phase of contact filtering.

Through patents which it previously owned, awarded to Marvin L. Chappell and Merle M. Moore, the Standard controlled the principle of applying heat and quickly cooling in the decolorizing process to prevent oxidation, removing the treating material from the oil by means of a filter press or otherwise, and keeping air away from the oil undergoing treatment by means of steam or sulfur dioxide. The patents just bought by the Standard from Weir are as follows:

1,492,184—Method of Treating Colloidal Clay, filed Sept. 8, 1922, issued April 29, 1924 to James W. Weir and John C. Black.

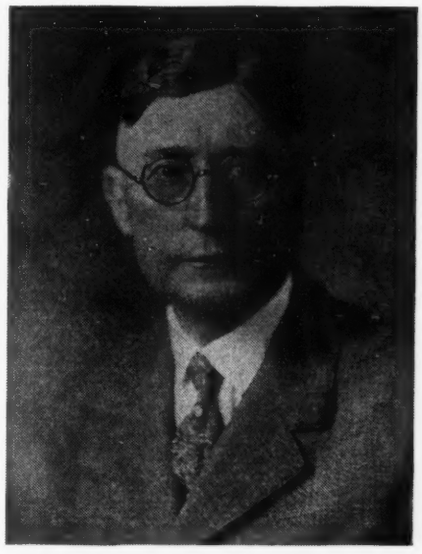
1,505,453—Method of Extracting Wax from Wax-containing Hydrocarbons, filed Jan. 10, 1923, issued Aug. 19, 1924, to James W. Weir.

1,509,326—Method of Treating Petroleum Oil, filed June 11, 1924, issued Sept. 23, 1924 to James W. Weir.

1,525,016—Method of Manufacturing Lubricating Oils, filed Oct. 10, 1922, issued Feb. 3, 1925, to James W. Weir.

1,564,501—Method of Manufacturing Lubricating Oils, filed March 21, 1922, issued Dec. 8, 1925, to James W. Weir.

1,572,465—Process for Manufacturing Lubricating Oils, filed Oct. 19, 1922, issued Feb. 9, 1926 to John C. Black and James Weir.



James W. Weir

1,581,369—Method of Refining Lubricating Oil Stocks, filed May 14, 1925, issued April 20, 1926 to James W. Weir.

1,581,370—Process of Manufacturing Lubricating Oils, filed Nov. 9, 1925, issued April 20, 1926 to James W. Weir.

1,592,058—Process for Refining Mineral Lubricating Oils, filed May 14, 1925, issued July 13, 1926, to James W. Weir.

1,603,174—Process of Refining Mineral Lubricating Oils, filed May 14, 1925, issued Oct. 12, 1926, to James W. Weir.

I wrote two stories which were published respectively in the June 9 and June 16 issues of National Petroleum News, in which the history of the development of contact filtering on the Pacific coast was outlined and the patent status existing at that time given. At that time it appeared that the General Petroleum Corp., the Standard of California and Weir and Black dominated the contact filtering field from a patent standpoint.

Now, with the victory over the General Petroleum Corp. in the patent office and the purchase of Weir's patents it appears that the Standard holds the controlling patent position in the field.

The leaders of the development of contact filtering methods, beginning around 1916, were Paul W. Prutzman and Carl J. von Bibra of the General Petroleum Corp., Black and Weir, both at that time employed by the Standard, Black as manager of the El Segundo refinery, and Chappell and Moore.

As has been stated in previous stories in this paper, Max B. Miller has made an arrangement with the Standard of California whereby he is permitted to license the use of contact filtering processes designed by his own organization, to refiners for use in connection with the centrifugal dewaxing of bright stocks and long residuums.

Gulf's McElroy Field To Be Unit Development

Staff Special

FORT WORTH, Oct. 30.—The Gulf Production Co. may now proceed with unit development of its McElroy ranch pool, along the Crane-Upton county boundary, about 12 miles north of earlier production in the Hurdle district. It closed a deal, Oct. 29, with William H. (Bill) Dunning, drilling contractor of Fort Worth, whereby the Gulf gets all of Dunning's leaseholds inside, or adjacent to, the Gulf's 27-section McElroy block, including his 900 barrels daily production from one completed well. Terms of the deal have not been announced, but the consideration is said to be between $1,000,000 and $2,000,000.

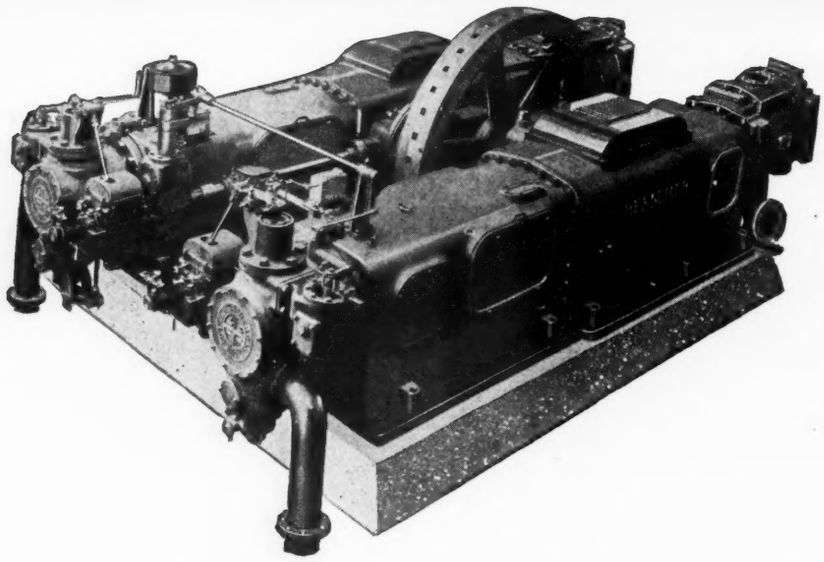
Dunning originally leased the McElroy ranch about a year ago for prospecting purposes. When he transferred the Gulf 27 sections in the Western part of the ranch he retained three tracts of 160 acres each inside the Gulf block and two full sections at the northwest and southwest corner of the block.

The Gulf a few months ago drilled in its discovery well, good for a few hundred barrels, at approximately 2750 feet. Later it drilled other wells to the top of the pay and suspended operations until steel storage could be completed to care for the oil. When a first 80,000 barrel tank had been completed last week, as reported in the Oct. 20 issue of this periodical, the Gulf began completing such wells as it had down to the pay. One well made 120 barrels an hour at its best and others ranged from 300 to 1000 barrels daily production, its four completions totalling at their best roundly 3000 barrels combined yield.

Dunning's well on 160 acres in the center of the Gulf block came in for 1000 barrels, initial production, a week ago.

In addition to the acreage hereinbefore mentioned, the deal with Dunning involves the transfer of his other holdings in the McElroy ranch, totalling thousands of acres east of the earlier Gulf leaseholds. None of the wells in the McElroy pool has shown any water and the field is considered a second West Texas development, comparable with Big Lake, Reagan County.

BELMONT, N. Y.—Waffler Oil Co. has installed new storage here for Emco gasoline, a product of the Emery Manufacturing Co., Bradford, Pa.



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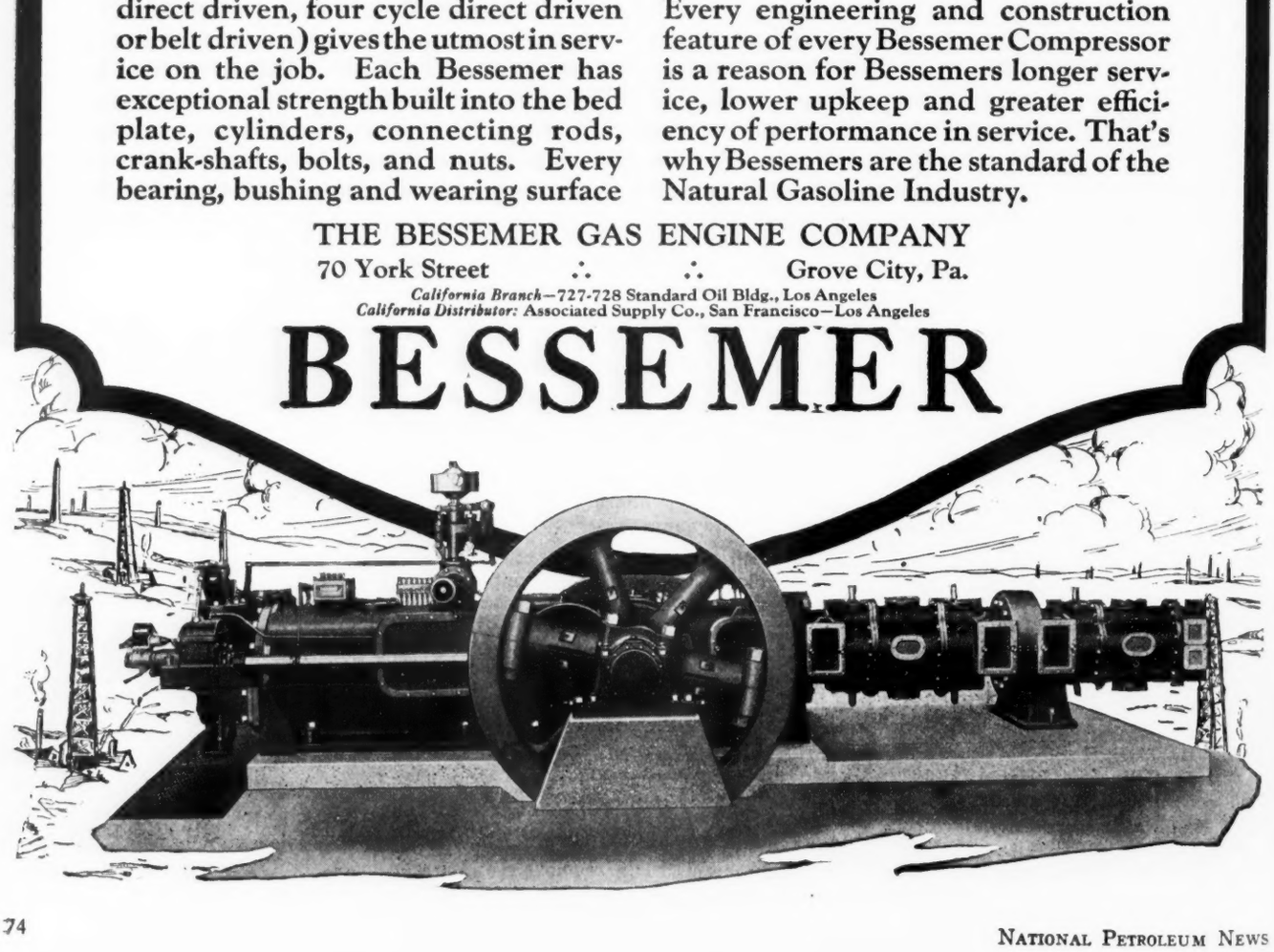


Growing Seminole Production May Break Mid-Continent Crude Market

By A. F. Hinton
N. P. N. Staff Writer

UNDER the stimulus of the sensation rise of the Seminole field which during the past week entered the select circle of 100,000 barrel fields, Oklahoma production registered an increase of 24,700 barrels and averaged 539,075 barrels daily, according to National Petroleum News estimate.

At the close of the week, Seminole actually was producing more than 120,000 barrels daily, as compared with its average for the week of 98,000 barrels so that the state today is producing 560,000 barrels a day or more, which is getting close to the highest figure it has ever attained.

Other fields in Oklahoma recorded only nominal changes in production, most of them tending downward, including the Braman district which had been increasing for several previous weeks. Seminole developments eclipsed all other field news during the week, as that pool now is apparently destined to become the largest in Oklahoma's history and developments came thick and fast in the past few days. Although its production is already far beyond the capacity of the pipe lines so far completed to handle the oil, a number of very large wells were drilled in during the week, adding to the congestion, and bringing field's production up to 100,000 barrels a day and beyond.

Shut-down Program Fails

SEVERAL meetings of Seminole operators were held in an effort to devise a plan by which a shut-down could be brought about. At one time it appeared likely that an agreement would be reached but at the final session one company refused to accede to the plan and the whole proposition blew up. Proponents of the shut-down idea have not given up hope, however, and another meeting has been called for Tuesday at which another effort will be made to bring about an agreement. Press representatives are excluded from these meetings and it has been difficult to obtain authoritative information as to what transpired behind the closed doors.

It seems almost a certainty that crude market will break under the burden placed upon it by Seminole's large and growing output, and this danger becomes even more imminent if the field's development is to continue at unabated speed.

Representatives of the state corporation commission have been spending some time in Seminole lately investigating the loss of oil which has occurred through inadequacy of pipe lines and storage facilities, and it is reported that they are trying to find how far they can go under the law in enforcing a shut-down and stopping the waste.

It is likely that next week will see some improvement in the pipe line situation and announced plans indicate a line capacity of about 175,000 barrels in the next 30 days, when all projects now under way will have been completed.

In the meantime, it is probable that 60 or more wells will be completed during November, if the shut-down finally fails to materialize. If these wells are brought in and if their output is comparable to the wells now producing in the field, it is easy to see that production could be twice what it is now and would still be greatly in excess of pipe line facilities.

Proration of runs by pipe line companies is indicated as a probability of the near future. Neither this nor a reduction in crude prices would suffice to stop drilling, however, as that could be brought about only by an agreement among the operators. Most of the companies operating in Seminole already have started construction of storage tanks.

Would Speed Tank Erection

THE principal effect of proration would be to speed up this work, probably resulting in the construction of large tank farms in the vicinity. Seminole is strictly a big company field, all the operators being well able financially to stand the gaff and to fight it out with the others to get the most oil and get it first. The only individual operators with leases now looking at though they will be in the production area are T. B. Slick and Senator W. B. Pine, they having holdings to the south and north respectively of present production.

The Indian Territory Illuminating Oil Co. and the Superior Oil Corp. are probably the smallest companies operating in the field. The former company, which drilled the discovery well in 24-9-6 has 360 acres of leases in the heart of the field with production of 16,400 barrels daily and is drilling 36 wells in Seminole and surrounding territory so it is in the major cases as least as far as Seminole is concerned.

Outstanding in interest among new Seminole wells of the past week, were the three new ones in the south end each of which was an extension of production limits and which also were the highest wells in the field structurally and among the largest producers. These wells were the Superior Oil Corp. No. 1 Cudjo, in the center NW, SE, NW of 35-9-6, the Sinclair, Oil & Gas Co. No. 1 Cudjo A in the northeast corner NW of 35 and the same company's No. 1 Cudjo B in the NW corner of the same section. The last named is the highest well in the field on the Wilcox sand having found this horizon at minus elevation of 3089 feet, as compared with minus 3210 feet in the Independent Garland discovery well three quarters of a mile northeast and with minus 3311 in Gypsy Oil Co. No. 2 Fixico lowest well in the field so far.

At last reports this Sinclair well was making 7505 barrels in sand from 3959 to 3973 feet. The other Sinclair well 2000

Drilling Operations in Oklahoma, Kansas and North Texas

	Oct. 30 — Week Ending					Oct. 23				
OKLAHOMA	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
Burbank	5	30	12	...	47	19	16	15	...	50
Other Osage	12	20	32	3	67	9	7	46	6	68
Bristow-Cushing	19	20	131	11	181	18	13	129	18	178
North Oklahoma	24	31	211	41	307	5	26	145	50	226
South Oklahoma	23	26	174	41	264	28	27	157	45	257
Muskogee	..	7	66	25	98	...	7	72	23	102
Okmulgee-Bristow	6	56	124	31	217	7	43	127	33	210
Tonkawa	1	...	14	3	18	1	1	13	3	18
Wewoka-Cromwell	21	28	256	30	335	21	32	252	33	338
Total Oklahoma	94	212	953	197	1456	108	172	956	211	1447
KANSAS	72	74	190	115	451	65	71	206	106	448
NORTH TEXAS										
Eastland County	..	1	52	10	63	...	2	61	10	73
Stephens County	..	5	21	21	47	...	11	26	12	49
TexasPanhandle	..	146	338	151	635	...	152	351	119	622
Mexia District	..	3	8	4	15	...	4	14	8	26
E. Texas Wildcats	..	6	11	13	30	...	4	12	12	28
W. Texas Wildcats	..	161	372	103	636	...	179	392	116	687
Wichita Falls	..	100	138	52	290	...	90	140	64	294
Total N. Texas	...	422	940	354	1716	...	442	996	341	1779
GRAND TOTAL	166	708	2083	666	3623	173	685	2158	658	3674

Completions in N. C. & E. Texas, & Panhandle Week Ending Oct. 30

Company	Well Farm	Location Survey	Depth	Initial Prod.
Brown County				
Humble	1-Hickman	Benson	1202–1224	50
Humble	4-Hickman	Benson	1185–1201	150
Kone	7-Kilgore	Delgado	1192–1212	75
Tidal	1-Hodnott	Harris	784–1180	150
Huffman	6-Kilgore	McClure	1178–1188	75
Humble	5-Wooldridge	ET	1244–1272	126
Phillips	4-Proctor	Swain	1304–1318	25
McLester	11-Wooldridge	ET	1242–1267	125
McLester	13-Wooldridge	ET	1258–1290	75
Texas	7-Eddington	Milliken	1268–1283	10
Hill West	17-Newton	Mitchell	1197–1 17	40
Williamson et al	6-Keller	Mitchell	T.D.1162	30
Williamson et al	7-Keller	Mitchell	1133–1158	40
Amerada	2-Fry	Stubblefield	1311–1313	200
Smith	2-Newton	Honeycutt	1225–1245	10
Gibson	2-White	Vernon	1217–1220	200
Dozier-Bowers	2-Cason	Wilson	T.D.1518	10
Humble	4-Kilgore	Delgado	1270	Dry
DeBuske	1-DeBuske	Travis	T.D.1446	Dry
Cosden	1-Wright	Jones	T.D.1450	Dry
Hill-West	18-Newton	Mitchell	T.D.1260	Dry
Wise-Jackson	1-Smith	S. A. M. G.	T.D.1558	Dry
Callahan County				
Goodloe et al	1-Jackson	BBB&C	979– 989	Dry
Cranfill et al	3-Bond	Comal	1389–1401	150
Slick	4-Bond	Anderson	1387–1406	20
Coleman County				
Urban	1-Gray	Ised	2506–2509	25
Collingsworth County—Panhandle				
Gibson	1-Coombs	H&GN	T.D.2215	Dry
Comanche County				
Wolfe et al	1-Guinn	Disham	T.D.2850	Dry
Concho County				
Kimberlin et al	1-Shultz	T&NL	T.D.1572	Dry
Culberson	1-See	Curt	T.D.1565	Dry
Crane County				
Cranfill	1-Lea	Sch Land	T.D.3440	Dry
Marland	2-Hughes	GCSF	2301–2323	35
Marland	3-Hughes	GCSF	2308–2324	70
Eastland County				
Amix et al	3-Connellee	Foster	2934–2954	2M
Lewis-Moore	1-Whittington	H&TC	1232–1236	15
Gulf	1-Ferrell	McLennan	T.D.2256	Dry
Ector County				
Zweifel	1-Johnson	TP	T.D.3605	Dry
Eastland	1-Buchanan	TP	T.D.3520	Dry
Simms	1-Edwards	TP	T.D.3732	Dry
El Paso County				
Burns-King	1-Fee	T&StL	T.D.4910	Dry
Garza County				
Deep Rock	1-Swenson	H&GN	T.D.3502	Dry
Emerald	1-Boren	H&GN	T.D.2500	7
Gray County—Panhandle				
Gulf	1-Merton	I&GN	3235–3250	100
Phillips	1-Merton	I&GN	3042–3150	510
Gulf	1-Worley	I&GN	2992–3044	110
Gray County				
Gulf	1-Reynolds	I&GN	2995–3015	260
Humble	1-Reynolds	I&GN	2940–2972	89
Wilcox	14-Reynolds	I&GN	2938–2950	1210
Howard County				
Magnolia et al	1-Chalk	W&NW	1577–1586	45
Magnolia	4-Chalk	W&NW	1619-T.D.	100
Hudspeth County				
Loftis	1-Veal	Univ.	T.D.2600	Dry
Hutchinson County—Panhandle				
Gulf-Panhandle	30-Dial	H&OB	2890–2975	1500
Phillips	3-Martin	HOB	2929–2953	200
Phillips	4-Martin	HOB	2897–2945	240
Phillips	2-Perkins	H&GN	2993–3071	250
Phillips	1-Martin	HOB	2867–2900	700
Phillips	2-Martin	HOB	2912–2942	200
Gulf	4-Whittenburg	GSF	2922–2993	100
Gulf	2-Whittenburg	H&TC	2714–2771	10
Hagy	1-Johnson	H&TC	2709–2735	10
Phillips	1-Johnson	H&TC	2818–2828	20
Gulf	11-Johnson	H&TC	2890–2897	4200
McMan	4-Gray	A&B	2899–2943	2600
Phillips	4-Whittenburg	Williams	2911–3004	1060
Phillips	5-Johnson	A&B	2915–2925	700
Devonian	1-Grace	M&C	2860–2924	60
Gulf	4-Johnson	H&TC	2884–2912	75
Marland	9-Whittenburg	H&TC	2976–3000	400
Marland	10-Whittenberg	H&TC	2932–2951	970
Marland	11-Whittenberg	H&TC	2915–2949	200
Marland	12-Whittenberg	H&TC	2955–2991	600
Hutchinson County				
Phillips	3-Whittenburg	Whitley	2875–2897	2500
Phillips	5-Whittenburg	Whitley	2857–2898	300
Phillips	16-Whittenberg	M&C	2900–2953	2000
Phillips	18-Whittenberg	M&C	2921–2995	2500
Skelly	2-Johnson	M&C	2928–2969	2000
West Tex	9-Johnson	M&C	2895–2965	2300
McMan	7-Holmes	M&C	2718–2771	800
Phillips J. R.	2-Smith	M&C	2770–2834	180
Phillips Pet	3-Kingsland	D&SE	2118–2850	75
Phillips	2-Kingsland	M&C	T.P.2940	68
American	1-Weatherly	M&C	2900–2997	700
Marland	3-Weatherly	M&C	2980–3044	225
Marland	4-Weatherly	M&C	3015–3040	100
McIlroy	3-Smith	M&C	2958–3038	1450
Phillips	2-Smith	M&C	2960–3064	2000
Hughes	8-Kingsland	M&C	2735–2795	2400
Japhet	5-Smith	M&C	2840–2868	150
Phillips	1-Kingsland	M&C	2710–2795	500
Gulf	2-Cockrell	M&C	2882–2960	720
Gulf	16-Burnett	I&GN	3110–3117	40
Irion County				
Orient	1-Suggs	H&GN	T.D.1892	Dry
Orient	2-Suggs	Fisher	T.D.150	Dry
Tankerly et al	1-Edwards	Jones	T.D. 200	Dry
Jack County				
Buttram	2-Cullers	Chairs	2054–2063	75
Jeff Davis County				
Herbert	1-Denton	Denton	T.D.3015	Dry
Limestone County				
Transcontinental	14-Rosson	Varella	T.D.2843	Dry
Pure	1-Oliver	Sullivan	T.D.1448	Dry
Transcontinental	13-Rosson	Varella	T.D 2849	60
Transcontinental	4-Medlock	Varella	2802–2807	553
Navarro County				
Lea et al	1-Kerr	Ellis	T.D.1516	Dry
Pecos County				
Adams	1-Develing	Ashmore	T.D.1004	Dry
Adams	2-Develing	Ashmore	T.D. 410	Dry
Adams	1-Gray	GCSF	T.D.1122	Dry
Dixie	1-Hershinson	TP	T.D.5312	Dry
Reagan County				
Hoffman et al	1-Walter	GCSF	T.D.3110	Dry
Reeves County				
Schooler et al	1-Beauchamp	TP	T.D.3500	Dry
Shackelford County				
Rosier-Pendleton	1-Nail	ET	T.D.2001	Dry
Hazelton	1-Williams	TEL	T.D.1203	Dry
Rosier-Pendleton	34-Cook	ET	T.D.1405	Dry
Overlease	2-Stephens	TEL	T.D.1138	Dry
Overlease	3-Mathews	TEL	T.D.1188	Dry
Gwinnup	1-Goodwin	TP	T.D.2033	Dry
Rosier-Pendleton	14-Cook	ET	1338–1351	100
Rosier-Pendleton	27-Cook	ET	1430–1442	110
Rosier-Pendleton	18-Cook	ET	1311–1314	181
Rosier-Pendleton	17-Cook	ET	1199–1219	75
Rosier-Pendleton	2-Cook	ET	1184–1187	100
Texas	7-Osborne	Univ.		75
Stephens County				
Tex-Pac	67-Binney	Sec. 53	1876–1896	75
Mook-Tex	1-Bruce	Sec. 51	T.D.2125	Dry
Livingston et al	1-Chistson	BAL	T.D.4200	Dry
Chastain et al	1-Satterfield		T.D.3636	Dry
Valverde County				
Plateau	1-Morrison	I&GN	T.D.3307	Dry
Upton County				
Dixie	6-Hughes	TEL	2040–2179	250
Texas	9-King	GCSF	2085–2150	35
Independent	3-Wooley	GCSF	2047–2160	1000
Independent	3-Burleson	Jones	2172–2215	61
Humble	4-Burleson	Jones	2160–2186	100
Young County				
Halmack	1-Logan	Duth	T.D.2361	Dry

feet to the east is producing 8240 barrels it having found the Wilcox sand at minus 3135 feet and drilled 18 feet in.

The Superior well which is the farthest south producer in the field is now producing 9421 barrels daily. It is also quite high on the Wilcox as that sand was found at elevation minus 3122 feet or 88 feet higher than in the discovery well 4700 feet to the northeast. It is now 12 feet in the sand. The oil from this well tests 42.3 degrees gravity as corrected for temperature of 60 degrees.

It is certain that a large number of wells will start up immediately in the vicinity of these new wells, if no shut down agreement is reached as apparently this is one of the richest spots in the entire field. Among other wells drilled in during the week was the I. T. I. O. Co. No. 1 Bowlegs in the northwest corner SE of section 26. This well is making 3586 barrels and had the Wilcox sand at elevation minus 3274 feet. The same company's No. 1 on this lease which had initial production of 10,500 barrels and was the highest well in the field until the three south end wells came in this week, is still producing nearly 9000 barrels daily.

The west offset to the No. 1 Bowlegs, Pure Oil Co. No. 1 Strothers is making 4652 barrels it having been completed the same day as No. 1 Bowlegs. It is considerably the highest structurally of the two getting the Wilcox at minus 3205 feet. This company's No. 2 Strothers is now producing 6550 barrels and No. 6 which will probably be the next well in, is drilling in the Viola lime at 3940 and showing oil and gas.

Completions in Oklahoma and Kansas, Week Ending Oct. 30

Carter County

Company	Well	Location	Depth	Initial Prod.
Franklin-Prairie	8	SWc NE NW 3-2-3W	2189–3007	22½M
Roxana	1	NWc SE NW 16-2-2W	1560–1566	1
Magnolia	4	SW NW SE 34-1-3W	2942–3030	50

Creek County

Shaffer	1	NEc NW SW 26-18-7	2985–2995	10M
Transcontinental	1	NEc 20-17-8	3550–3568	100
Lima	2	NWc SW SW 30-15-8	3192–3202	29M
Texas	5	CEL NE SW 26-14-8	2431–2466	10
Ted Ray	1	SEc SW 13-17-10	1832–1852	110
Pioneer	12	CNL S½ NW NE 24-17-10	2445–2470	100
Smith	4	NWc SW SW 3-17-11	2337–2338	8M
Tibbens	1	NWc NE NE 30-15-9	2248–2299	5
Wright	11	NEc SW SE 24-17-10	T.D.2530	Dry
Evans	1	SEc NW SE 30-17-11	T.D.2863	Dry

Garfield County

Healdton	34	C S½ NW NE 24-22-4	1108–1123	25
Franchot	1	SWc 7-22-3	1280–1300 OWD	2
Sinclair	48	SW NW NW 18-22-3	T.D.2735	Dry
Sinclair	36	NEc NW NW NW 19-22-3	T.D.3444	Dry

Garvin County

Mid-Cont	4	SEc NW SE 17-1-3W	T.D.2225	Dry

Grady County

Badgett et al	1	SWc NE SW 10-5-7W	T.D.2989	Dry

Grant County

Wrightsman	1	SWc SE NW 19-28-3W	T.D.4290	Dry

Hughes County

Amerada	10	SEc NE NW 5-7-8E	4185–4197	518
Independent	5	SEc SW SE 26-9-9E	3229–3238	408
Transcontinental	11	SEc SW 26-9-9	3030–3035	227
Mid-Cont	13	C S½ N½ NW 30-9-9	T.D.4120	Dry
Transcontinental	8	SEc NW SW 26-9-9	T.D.3515	Dry

LeFlore County

LeFlore	70	SWc NW SE 35-7-26E	T.D.1865	Dry
LeFlore	71	SWc 18-7-27E	T.D.1648	Dry

Lincoln County

Gypsy	1	NWc SE SW 8-15-6	T.D.4365	Dry

Muskogee County

Sommerville	1	NEc NW NE 17-15-17	T.D.1479	Dry
Kate-Tetin	1	C SW NE 5-14-19	T.D. 768	Dry
Kistler	4	NWc SW 29-15-15	1555–1572	100
Culp et al	5	SEc NW SE 30-15-15	1553–1574	15

Okfuskee County

Amerada	1	SWc NW 18-10-11	3643–3656	70
Gypsy	2	NWc NE SE 35-11-9	3181–3192	60
Umburn	1	NWc SW 36-11-11	2550–2565	7M

Okmulgee County

Devonian	8	C SE 24-16-12	2223–2235	50
Kistler et al	5	CEL NE NW 3-11-12	896– 927	1M
Johnson	1	NWc NE NE 16-15-12	T.D.2722	Dry

Osage County—Burbank

Phillips	5	NW SW SW 1-27-5E	2931–2980	50
Phillips	7	NW SE SW 1-27-5	2955–2989	450
Skelly	7	NWc SW 26-27-5	2960–2974	10
Phillips	1	SWc SE 7-27-6	2965–3013	75
Phillips	14	NEc NW SE 7-27-6	2965–3013	800
Kewanee	1	SEc NW 34-27-6	2822-T.D.	1810
Kewanee	2	NWc SW NE 34-27-6	2784–2860	767

Osage County

Texas	2	NW SW 29-25-8	2482–2512	130
Lewis	5	SE NW NE 30-25-8	2458–2478	125
Atlantic	1	NE SW NE 19-24-8E	2840–2844	200
Winona	6	NE SW SW 27-24-10	1330–1346	20
Walker	12	NE NW NW 34-24-10	1291–1318	25
Continental et al	1	NWc 7-23-9	2071–2100	30
New England	1	SEc SW 17-23-10	2516–2524	120
Silurina		SE NE NW 17-23-12	1492–1555	120
Pure	4	SEc NW SE 25-22-7	2808–2810	60
Tidal	20	SEc NW SW 34-22-10	1913–1935	25
Kewanee	4	SE NW SE 4-22-11	1138–1157	5
Barnsdall	19	CE LW½ SE 30-21-12	1875–1932	55
Delmar	1	SEc SW 12-28-11	T.D.1998	Dry
Peters	1	NWc SW 18-23-9	T.D.2277	Dry
Kewanee	3	SEc SW NW 17-21-12	T.D.1637	Dry
Okla. Natl	763	NWc NE 20-21-11	T.D.1817	Dry

Pawnee County

Watchorn	16	SWc NE SW 33-23-3	2000–2025	1.8M
Gypsy	1	SEc SW SW 4-20-8	2527–2543 OWD	15

Payne County

Magnolia	2	NEc SE SE 32-20-5	3100–3156	57
Twin State	1	SEc 15-19-5	2787–2847	75
Marland	3	NWc SW SE 7-18-5	2820–2846	20

Sequoyah County

LeFlore	1	NWc NE NW 25-10-25	T.D.3134	Dry

Seminole County—Seminole

Amerada	1	NEc NW SW 34-9-6	T.D.4350	Dry
Searight et al	3	NWc NE SE 33-10-6	4311–4318	4841
Mid-Cont	1	SEc 14-9-6	4188–4209	4920
Barnsdall	2	NEc SE NW 24-9-6	4128–4133 OWD	3225
Tidal	1	NEc SW 24-9-6	4157–4169 OWD	5320
I. T. I. O.	7	NWc SW SE 24-9-6	3941–3976	1474
Indep.-Garland	4	NWc SW NE 26-9-6	4131–4154	4600
Pure	2	NEc SE SW 26-9-6	4058–4070	9019
I. T. I. O.	3	SWc NW SE 26-9-6	4043–4051	10,500

Seminole County

Gypsy	1	NWc SE 15-8-6E	2452–2458	3M
Magnolia	4	NWc SW SW 33-8-8	T.D.4024	12
Prairie	9	NEc SW SE 31-8-8	T.D.4150	150

Stephens County

Texhoma	1	SEc 26-2-6W	T.D.2080	Dry

Tulsa County

Superior-Swift	12	NWc NE NW 7-19-10E	2015–2031	180
Minshall et al	2	SWc SE SW 15-19-11	2218–2222 OWD	60
Cato	10	C SE NE 29-19-11	2480–2502	15
Upp et al	1	CWL E½ SE SW 4-19-14	T.D.1302	Dry
Hilt et al	3	NEc NW SW 6-17-13	T.D.1970	Dry
Beasley	1	C NE NE 29-17-13	T.D.1705	Dry

Wagoner County

Boyles	2	CWL NW NW 6-17-16	T.D.1994	Dry
Mitchell	1	NEc NW NE 36-17-16	T.D.1490	Dry
Tabasco	3	CNL SW NW NE 6-17-15	T.D.1350	Dry

KANSAS

Cowley County

Marland	1	C NW SW SE 15-32-4	3369–3371	99
Trees et al	1	SEc SW 15-32-4	T.S.2527	100

Greenwood County

Sinclair	47	C W½ SW 20-22-10E	2275–2349	85
Sinclair	48	C NE SW 20-22-10	2254–2325	120
Davis et al	9	C SE SW SW 7-22-11	2089–2131	150
Simmons et al	11	C NW NE SE 4-22-12	1805–1830	150
Simmons et al	8	C SE NE NE 9-22-12	1820–1845	150
Braden-Derby	1	SEc SW SE 22-22-13	1833–1843	20
Simmons et al	1	C SE SE SW 29-22-13	1698–1716	250
Darby et al	4	C SW NE NE 17-23-11	1959–2020	250
Theta	24	C NW NW 10-23-13	1568–1600	15
Empire	1	NEc NW 27-23-13	1756–1776 OWD	10
Mid-Cont	8	NEc SW NE 28-23-13	1745–1758	15
Sinclair	41	C NW SE NW 20-22-10	T.D.2425	Dry
White Eagle	1	C SE SE NE 10-22-11	T.D.1950	Dry
Davis et al	3	C NW NE NW 22-23-9	T.D.2905	Dry
Mid-Cont	9	SEc 28-23-13	T.D.1862	Dry
Flack et al	1	C SE SE SW 16-24-10	T.D.2310	Dry
Robertson et al	1	C SW NW NW 20-24-11	T.D.2010	Dry

Lyon County

Gashe et al	1	SEc NW 25-20-12	T.D.1977	Dry
Terrian et al	1	C NE NE NW 33-21-13	T.D.1937	Dry

Marion County

Leeward	1	C SE SE SE 29-19-4	T.D.2650	Dry

Sumner County

Broadhurst et al	1	CNL S½ NW 13-35-2W	T.D.4280	Dry

Completions in North Louisiana and Arkansas, Week Ending Oct. 30

Caddo Parish—Caddo District

Company	Well	Location	Depth	Yield
Gulf Refining Co.	Ferry Lake, 256	15–20–16	2225	7M. gas
Magnolia Petroleum Co.	Dillion No. 17	24–21–15	3644	1200

Caddo Parish—Blanchard District

Owl Oil Company	Hammock No. 1	34–18–16	971	12M. gas

Caddo Parish—Greenwood District

Owl Oil Company	Wellbourne No. 1	4–17–16	2604	10M. gas

Caddo Parish—Vivian District

Bayou State Oil Co.	Peak No. 23	23–22–15	1040	45
Ramsey et al	Powell No. 1	36–22–16	1040	25

La Salle Parish—Little Creek District

Montague Oil Co.	Zenoria No. 5	11– 9–1E	1504	215
Geo. W. Weatherbee	Urania A-5	2– 9–1E	1502	35

La Salle Parish—Urania District

Love et al	Zimmerman No. 1	25–10–1E	1523	100
Shreveport Oil Corp.	Pendarius No. 3	26–10–1E	1527	85

Union Parish

Lizzie Wilson	No. 1	5–10–1E	3055	Dry Aband.

Grant Parish—Little Creek District

L. C. Swope	No. 2	17– 9–1E	1610	35

Natchitoches Parish

Gulf Refg. Co.	La.L.L.Lbr.Co.No.A-1	39– 7–7W	2014	Dry Aband.

Ouachita Parish—Monroe District

Company	Well	Location	Depth	Yield
Palmer Corp.	J. T. Cole, Hrs. No. 4	7–19–4E	2165	5½M. gas

ARKANSAS

Nevada County—Nevada District

Autrey Oil Company	A. McKinney No. 1	9–14–21	1263	150
Wright Oil Co.	Groves No. 1	12–14–21	1163	75

Ouachita County—Stephens District

Arco Oil Company	Davis No. 1	22–15–19	1560½	S.W.Aband.
Ohio Oil Company	Bettie Hall No. 4	31–15–19	2152	15

Union County—Calion District

Wingfield et al	McGough No. 1	22–17–13	3105	S.W.Aband.

Union County—Eldora District

Cook Drlg. Co.	Tatum No. 12	7–16–15	2675	30M. gas
Hollyfield et al	Giller No. 14	10–16–15	1996	55
Imperial Oil & Gas Co.	Stocks No. 1	21–17–16	2136	50
Magnolia Petroleum Co.	Hessler No. 4	8–16–16	2614	65
Ohio Oil Co.	Stocks No. 4	21–17–16	2164	25
Gulf Refg. Co.	Murphy-Hardy No. 42	3–16–15	2373	255
Ravenger Oil Corp.	Dumas No. 9	9–17–16	2115	20

Union County—Hillsboro District

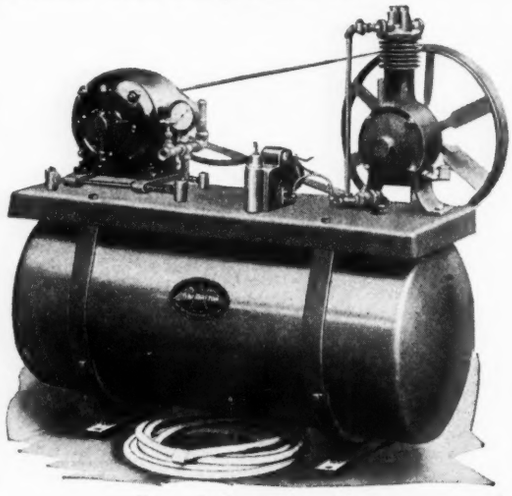
Phillips Petro. Co.	Cordell No. 1	6–18–13	2984	45

"The Compressor That Has Fewest Parts"

Why "Daytons" Satisfy

There's a heap of satisfaction in owning the type of compressor that requires the smallest amount of attention. Just a little oil now and then is all you have to remember when you install the Dayton Air Compressor.

The style E-2 single stage shown here has ½ H. P. Motor and 33 gallon tank. Automatic stop and start; compressor starts against no load. 25 feet of hose and chuck all complete to connect to electric wire and produce air.



Phosphor bronze bearings; automatic moisture release; automatic spring tension take-up on belt.

THIS IS DAYTON STYLE E-2

$160

One of the greatest compressor values in the world.

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One of the features of Dayton Air Compressor service is that we never, if we are consulted, permit you to buy too large a compressor or too small a type, to do your work in the most economical and satisfactory way. If we know the facts about your location and amount of air that will be needed, we advise in your best interest.

Below we show the only Two Stage Compressor in the world built without a connecting rod or crosshead pin. No bolts or cotter pins to come loose. You can use it a lifetime.

Patent - applied - for self aligning bearing is something new in compressor construction. Ask about it.

* * *

Get a new bulletin and give us the facts about your needs so that we can serve you to best advantage.

The LUCAS PUMP & TOOL COMPANY DAYTON, OHIO.

DAYTON AIR COMPRESSORS

425 Valley Street **Dayton, Ohio**

Allinson Made Assistant To Walter Miller

J. J. Allinson

TULSA, Nov. 1.—J. J. Allinson, formerly vice president of the Pierce Petroleum Corp. in charge of refining, has been made assistant manufacturing manager of the Marland Refining Co. He is now at Ponca City engaged in his new work.

Mr. Allison came to Oklahoma more than 20 years ago to work on a locating and construction party for the Midland Valley Railroad. He continued in railroad construction work until 1908 when he joined the engineering staff of the Associated Oil Co. in California. While with this company he supervised the building of the Avon refinery, rebuilt the Gaviota refinery and later enlarged the Avon plant.

In 1917 Mr. Allinson returned to Oklahoma as chief engineer for the Empire Gas & Fuel Co. and was later made assistant to the general manager. His work with the Empire consisted of rebuilding five refineries, building gas compressor stations, natural gasoline plants, pipe lines, pump stations, gravity systems, machine shops and the like. In 1921 he left the Empire to take the position with Pierce which he occupied until his recent employment by Marland.

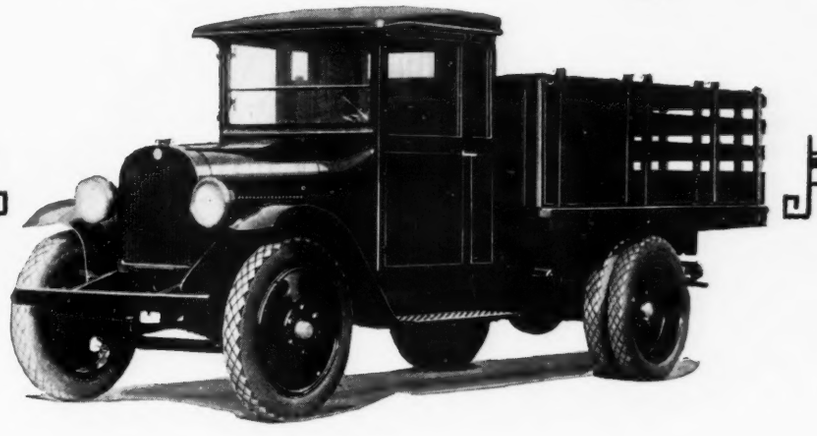
During his connection with the oil industry Mr. Allinson's construction and operating work has led him to a number of discoveries which he has patented. Some of these are a concrete reservoir with a liquid seal roof, inauguration of the use of cast iron pipe for flow lines in gravity systems, a jet condenser and crude oil dehydrator. He has been one of the pioneers in the development of modern refinery appliances such as pipe stills, heat exchangers and fractionating towers.

In addition to his work as an engineer Mr. Allinson has made a specialty of organization work. In recent years he has had a great deal of administrative experience as well as in the solving of construction problems.

News!

Budd-Michelin Dual Wheels are optional equipment on Graham Brothers 2-Ton Truck

No extra charge!



Plus value and ***plus*** service in this new 2-ton model.

Budd-Michelin Dual Wheels and pneumatic tires add to the traction. They save the truck from the buffets of the road. They save the load. They save the driver. They assure the truck a longer and more widely useful life.

Every Dual-equipped Graham Brothers Truck joins an army of 60,000 trucks and buses which are getting 15,000 to 20,000 miles to a set of tires. That's *plus* value and *plus* service.

BUDD

WHEEL COMPANY

Detroit

WE RESPECTFULLY NOMINATE THE WESTERN PROFESSOR WHO ADVOCATES DOLLAR GAS AS THE GUY TO SELL THE FIRST GALLON

Describes Methods of Drilling And Equipping Gas Well

IN the September issue of "Natural Gas," official publication of the Natural Gas Association of America, James Fitzgerald describes methods of drilling and equipping gas wells in West Virginia. Mr. Fitzgerald, who is the field superintendent of the Cumberland and Allegheny Gas Co., describes the methods in detail and included in the article is the outline of his company's practice in equipping a gas well after it is drilled.

"When the well is tubed," says Mr. Fitzgerald, "before shutting the gas in it is necessary to anchor the tubing to the casing or derrick sills, if a high rock pressure is expected. This is done in order to hold the rubbers of the packer against the wall and keep the tubing in the hole.

"Before shutting the gas in, we make it a practice to insert a very short piece of pipe between the tubing and the casing, connecting same to two or three joints of pipe extending from the rig, plug the space between the tubing and the casing at the top of the hole, and if there is any gas between the tubing and casing, light the gas. If the gas blazes up a few inches or feet, we extinguish it and shut the well in. The same test is tried in a few minutes, or an hour or two later, depending on how quickly the pressure accumulates, and we can then determine whether there is any gas leaking. If it is packer leak, the blaze will almost invariably increase quite rapidly as the pressure increases; if leaking around a coupling or couplings, the increase is much more gradual.

"In the case of a packer leak, it may be eliminated by drawing the anchor bolts a little tighter. If this does not stop the leak, the only alternative is to pull the tubing, if an anchor packer was used; if a wall packer, it may be raised or lowered and perhaps re-set successfully.

"In the case of collar leaks, if the well has a fair flow and there is more or less dust or sand coming out with the gas, very frequently by blowing the well off a time or two, these leaks will be stopped. Where this does not work, we have had very good success in pouring a gallon or two of paint into the hole, the amount depending on the size and amount of pipe about the packer. This is done by shutting the well in, screwing a short piece of pipe into the valve at the top of the well, pouring the paint into the pipe above the valve, then closing a stop or valve on top of the pipe holding the paint, and opening the well valve. In some cases it is surprising how quickly this will close collar leaks and if once closed, they are apparently closed for all time."

Panhandle Sale Reported

Staff Special—By Telegraph

TULSA, Nov. 1.—It is reported in Tulsa that the California Eastern Oil Corp., recently formed by the merger of several California companies, has bought the Canyon Oil Co.'s producing properties in the Panhandle field of Texas. The price reported is $1,500,000. The property consists of 60 acres in Hutchinson county with seven wells which have made as high as 10,000 barrels daily, collectively. The wells are now pinched in because of pipe line congestion.

The Editor's Viewpoint

National Petroleum News

Government as a Conspirator

THE United States Government is now planning to violate the anti-trust law and to conspire with aid and abet the cotton producers of the country to advance the price of cotton by unlawfully restricting not only its production, but its sale. This conspiracy calls for instructing the cotton producers not to plant so much cotton for next year and of this year's crop to arrange with government funds or some other funds means whereby at least four million bales of cotton may be held off the market until the price has been forced up.

If that isn't a conspiracy in restraint of trade, one wonders what it is.

However, the government is doing this openly—it has done it in one way or another on cotton in the past—it has talked of doing it in other products of the farm.

And yet if the oil industry or any other industry were to solicit the same governmental assistance and try and pursue the same policy, that assistance would be refused in the first place and in the second case the members of the industry would be prosecuted to the fullest extent of the law.

There seems to be one law for the farmer and another law for every other type of business man.

The thinking, in regard to the so-called poor farmer, is getting a bit clearer. The untruthful politician, who has been out playing for the farmer's vote with a lot of wild statements, is getting forced into the background by some of the legitimate, honest thinking farmers, but there still seems to be some careless thinking in high quarters of the cotton and farm produce business and the government.

We grant that the cotton men are up against a bad price situation but so has the oil industry been up against the same thing, particularly the western refiners. If the Mid-Continent refiners were to undertake to do the same thing that the cotton producers are planning, they could quickly improve the gasoline market to a point where it ought to be.

These cotton and other produce producers, in their solicitation for government assistance, are inviting more and more government interference with business. They are inviting, in fact demanding, that the government upset the operation of the law of supply and demand. It is a bad precedent—decidedly bad, because if it works out in the case of the cotton men, other producers are going to demand the same assistance and the first thing the government will know, it will have millions of dollars of real money tied up in surpluses of different products and no place to go for a market that will return that investment.

The government can very properly relax its even vicious watchfulness of business and let business more openly and frankly conduct campaigns of education for business men to pay more attention to statistics and to operate their businesses accordingly, but the government is certainly toying with fate when it undertakes to conspire with the farmers of the country to violate the anti-trust law.—W. C. P.

A Lecture on Art of Cracking

INTERESTING information is coming out in the trial of the suit brought by the United States government against the Patent Club. Some features which have made the Burton cracking process a success, which it is probable the refining world in general had never heard of, were described in detail by Robert E. Wilson, of the Standard Oil Co. of Indiana, the expert witness for the club when the day in court of the defendants began a couple of weeks ago in New York.

The testimony of Mr. Wilson, brought out by the skillful questioning of Russell Wiles, attorney for the Patent Club, amounts almost to a comprehensive lecture on the art of cracking oil. Mr. Wilson has a three-fold equipment for the job of expert witness in this case. First, he has thorough scientific knowledge of the subject. Second, he has the practical knowledge of how stills and other refinery equipment perform under actual working conditions, acquired no doubt, in many a day spent in muddy refinery yards at Whiting, Wood River and elsewhere. Third, he has the ability, developed during his years in the classroom as a professor at Massachusetts Institute of Technology, to set forth his thoughts in clear and simple language.

There is a blackboard in the trial room. Whenever a knotty point arises that puzzles the special master hearing the case, the witness again becomes Professor Wilson. With a piece of chalk, he illustrates his point clearly on the blackboard.

As Mr. Wilson, during two days of questioning, traced the development of the Burton process from William Burton's first idea to the greatly improved process of the present day, it was possible to visualize Dr. Burton, R. G. Humphreys, E. M. Clark, and their associates, burning the midnight oil, racking their brains and finally solving one at a time, more or less successfully the problems that offered obstacles to more efficient operation. Whether these developments constituted real inventions, or whether they represented the successful efforts of a group of extraordinarily able men to adapt to their own purpose knowledge which had long been known, is now a matter for the court to decide.

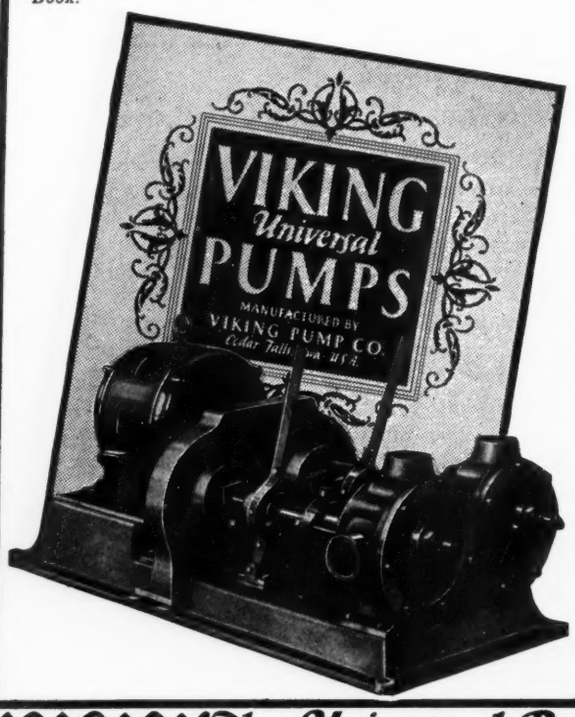
One fact that shows how much can be accomplished by men who do not know fully at all points what they are doing, stood out in one statement of Mr. Wilson. When he went to the Standard of Indiana in 1922 he said his first job was to measure the percentage of vapors from the Burton still that were refluxed into the still by the Humphreys runback. The percentage had been up to that time the subject only of conflicting estimates.

In other words, the operating men knew they got far better results with the runback than in the earlier stills without it, but they did not know how good or how bad a job of refluxing they were doing as compared with what might be done. Probably the ascertainment of the exact facts by Mr. Wilson is what influenced the company in newer installations to discard the runback in favor of the Lewis and Cook bubble tower, which gives vastly better results.

At any rate, the development of the Burton process, as described by Mr. Wilson, was a remarkable job.—P. T.

VIKING PUMPS

The type illustrated here is the twin oil pump. Supplied also for engine or belt drive. Furnished on fire wall base if desired. SEND TODAY for the VIKING Pump Book.



Meets Oil Industry Demands for Speed and Sturdiness

Wherever there is distribution of oil, Viking Pumps will be found. For the Viking completely answers all requirements.

There is quick, uninterrupted flow, for any two-inch Viking will unload an 8,000 gallon car of oil in one hour and thirty minutes.

For wear—year after year of even service—the Viking is unsurpassed. With its perfection of the rotary principle and with only two movable parts the Viking works on and on without any stops for repairs.

If your present pumps are straggling along, if you want to side step the pumping troubles that come up repeatedly, replace your equipment with the reliable Vikings. We are sure that its economical performance, ease of operation at a minimum of power and its faithfulness will win your praise just as these same qualities have already elicited the endorsement of thousands in the oil world.

May we not send you our large, illustrated catalog? You will find in it the type of pump that will exactly serve your purposes best.

VIKING PUMP CO., Cedar Falls, Iowa

VIKING PUMPS

The Universal Pump ~ For Every Use

Install These Handy Portable Units To Fight Inflammable Liquid Fires

The latest addition to the Pyrene family of fire killers is the 10-gallon Phomene (Foam Type) Extinguisher on wheels, shown at the right.

This extinguisher affords much in fire protection. It meets the need for a light, portable hand extinguisher to cope with such hazards as oil, gasoline, naphtha, enamel, tar, wax, grease, shellac, lacquers, inflammable solvents and chemicals.

Complete specifications of this size unit and our 40-gallon engines sent on request.

Wherever quantities of materials of an oily or highly inflammable character are manufactured, used, or stored, this device and our 2½-gallon Phomene (Foam Type) extinguisher are best to install. They prevent small fires from becoming big ones.

Equip your trucks with 1-quart or 1½-quart Improved Pyrene Fire Extinguishers.

Demonstrations arranged—anytime—anywhere.

Your oil-well supply dealer will supply you

PYRENE MANUFACTURING CO.
Newark, N. J.

"Fortify for Fire Fighting"

2½-Gallon Phomene (Foam Type) Extinguisher

Type D-1 P 10-Gallon Phomene (Foam Type) Extinguisher

Gasoline Pumps Supplant Two-Gallon Tins In Serving England's Gasoline

ENGLAND is fast taking to buying its motor fuel through curb pumps and gasoline stations, as we know them, say travelers familiar with the oil marketing industry in this country who have visited England this summer.

One oil company there estimates there were 30,000 gasoline pumps in England the early part of 1926 and that there will be 45,000 pumps by the end of the year. This same company estimates the average number of pumps to the station is 1.7, so that this 45,000 pumps will represent a good many thousand different places where gasoline is dispensed.

The tourist who delights in the narrow street and famous old school buildings of Eton and in the cathedral and chapels of Canterbury must prepare for the shock of finding a shiny new gasoline pump beckoning from the roadside as he rides into the historic atmosphere of these and other towns.

Only a very small number of the drive-in type of gasoline stations, which are similar in design and layout to those we are used to in this country, are run by the oil companies, such as the Anglo-American, the British Petroleum and the Shell. These are operated in connection with bulk storage plants and serve commercial trade only, not competing with the independently owned stations for the general motorist business.

These Independent stations for the most part are described as good looking places, with flower gardens and good housekeeping otherwise. The proprietor, contrary to general practice in this country, buys all his equipment for dispensing gasoline and oil. There is as yet little or no crankcase draining or greasing service offered at these stations. Pumps and tank equipment are generally purchased from the oil company, by putting up a small deposit and paying for the rest out of margin allowed on sales. Of the present retail price of from 35 to 40 cents per Imperial gallon for gasoline, the station margin is 8 cents, of which the oil company deducts three cents as payment for the equipment.

Carry Gasoline in Tins

THESE stations all carry gasoline in two-gallon tins, which was the accepted way of buying motor fuel until gasoline pumps came in and which is still used by a part of the motorist trade. On sales in cans the profit to the station is two cents a gallon. As with Independent stations in this country, they may carry three or four grades of gasoline, each being served from a pump showing the oil company's name and trademark. Each dealer also carries as many brands of motor oil as he may choose.

An English filling station

In addition to the gasoline stations, curb pumps are placed in front of all kinds of places of business. They handle gasoline and oil on the same terms as the stations.

Motorcycles and cars of small horsepower are much more used in England than in this country, because cars are taxed by horsepower, and more heavily than we are accustomed to in this country. Sentiment is growing, however, in favor of taxing gasoline sales instead of horsepower.

Purchases of gasoline are generally in amounts of from two to five gallons. While the English motorist is considerable of a tourist he travels in a radius that returns him to his own home at night. He is not the long distance tourist of the American motorist. Under these conditions he is generally a pretty steady patron of one station, where the service or personality of the owner has caught his fancy. If he fears he may run short of gasoline before he gets back home, he buys a two-gallon tin to take along in the car, which represents quite an auxiliary supply of fuel to the English car in most cases.

New Design of Pump

THE gasoline pumps are of the same design as found in this country, both piston type and visible. Inspection of pumps to insure accuracy is very rigid. The Shell interests have recently brought out a model comprising twin measuring containers of half or one gallon capacity arranged to be filled or discharged alternately, one discharging while the other is being filled, and synchronised to give continuous flow. The containers are fitted with glass panels back and front.

While the English may have adopted American ideas for merchandising gasoline, in their advertising they have gone their own way, and effectively also. Following is a sample of their copy as shown in a folder issued by the Shell company, entitled "Balaam's Car." The name of the company does not appear once on the four-page folder, and the word Shell appears three times in the text without even a different type face to call attention to it. A large illustration shows a red car, with a spotlight for an eye, leaning over the foot of a bed and talking to a man stretched out in bed. The text is in the form of narrative and reads:

* * * *

The day's motoring had not gone well for Jones. The roads had been unpleasantly crowded; he had engine and plug trouble more than once on the journey, and several supercilious speed merchants had roared past him. His own "bus" lacked life and vim, and the rain coming on during the last few miles of the run caused him to arrive home

wet and disappointed, cursing motoring in general and his own car in particular.

That night he did not sleep well. Strange experiences mingled with his slumbers. He was not startled then to see the bedroom wall swing back like a garage door and his car enter.

But it was alive—very much so, it seemed to Jones. Its headlamps were eyes that glared at him accusingly and there was a hard, stern look about the radiator that boded trouble. He was not the least surprised when the car addressed him as follows:—

"Wretched man! do you plead guilty or not guilty?"

"What do you mean?" said Jones, "I don't understand."

"It means this"—replied the car, fixing poor Jones with two powerful beams from its glaring eyes.

"Don't do that," interrupted Jones, "I haven't got my anti-dazzle glasses on."

"It means this," the car repeated solemnly. "I represent officially the S. P. C. M. C."

"What is that?" inquired Jones.

"The Society for the Prevention of Cruelty to Motor Cars."

"Don't be absurd," said Jones, "a motor car cannot feel, therefore cruelty cannot occur."

"That shows your abysmal ignorance," the car retorted. "You have an early Victorian mentality. Don't you know that science has already gone far beyond your old-fashioned ideas? Haven't you read that plants can lay traps for food, travel in search of water and sunshine, that a turnip shrieks with pain when you cut it? One of these days they'll broadcast the cry of agony when a carrot is scraped alive, just as they broadcast the nightingale."

"That may be," said Jones, "but a car's different."

"Don't be idiotic," replied the car brusquely. "Haven't you heard of steel getting tired? Haven't your engineers spoken of the need of rest for engines? Besides, should I be here arguing with you if I were not alive?"

"There's something in that certainly," replied Jones.

"Very well, then," snapped the car. "Now are you guilty or not guilty?"

"Guilty of what?"

"Of cruelty to your car—to me. If you had a horse would you buy it inferior corn?"

"Certainly not," said Jones rather rashly.

"Then," retorted the car triumphantly, "why did you starve me of Shell? You know I have a delicate carburetor. Then that alleged lubricant you gave me instead of good clean sweet Shell oil—it gummed up my rings and valves—it brought on valvular disease, and when it gave me indigestion and I couldn't pull, what did you do? You kicked me violently in the accelerator and half throttled me! Every kick made my heart throb terribly. I'm still suffering from shock, which my shock absorbers were quite unable to absorb. I am choked with grief and carbon deposit!"

And the car gave a deep hollow groan through its hooter.

"I'm awfully sorry, old chap," said Jones soothingly. "I'd no idea it made any difference to you, but if you feel so strongly about it I will promise to give you nothing but Shell in future."

The car smiled gratefully. "Thank you. I am glad you see the error of your ways." It then took a half turn backwards in going out and crashed into the wardrobe, and Jones awoke.

He rubbed his eyes.

"What an absurd dream," he muttered sleepily.

But was it absurd? I think not. We can learn a great deal, even from dreams!

This might be a service station on Main St. in your town, but in reality it is on the main Dover Road, 40 miles outside of London, England.

Run by an old sea captain named J. E. Wye, it is one of very few places in England, as far as is known, that offers other services to the motorist than selling oil or gasoline. This station sells sandwiches, and people are offered the use of the grounds for picnicing. There are swings and tennis courts. Attendants wear sailor uniforms. It is called the Clearway Filling Station.

Wadsworth Quits Pierce Petroleum To Join Independent O.&G. Co.

J. M. Wadsworth

Staff Special

TULSA, Nov. 1.—J. M. Wadsworth, general superintendent of refineries for the Pierce Petroleum Corp., has resigned effective Oct. 31, to become manager of the refining division of the Independent Oil & Gas Co. C. R. McKay, at present superintendent of the Pierce plant at Sand Springs, will succeed Mr. Wadsworth.

The Independent Oil & Gas Co. entered the refining division in June, 1925, when it purchased the Okmulgee plant of the Allied Refining Co. which had a capacity at that time of about 1200 barrels a day, producing steam refined cylinder stock in addition to the usual products of a skimming plant. Later the company purchased the adjacent plant of the Indiahoma Refining Co. which it remodeled and consolidated with the Allied plant, bringing the capacity of the plant up to 6000 barrels a day. A centrifuge plant was added to produce bright stocks and long residuum oils and a 1000 barrel Jenkins cracking unit was installed.

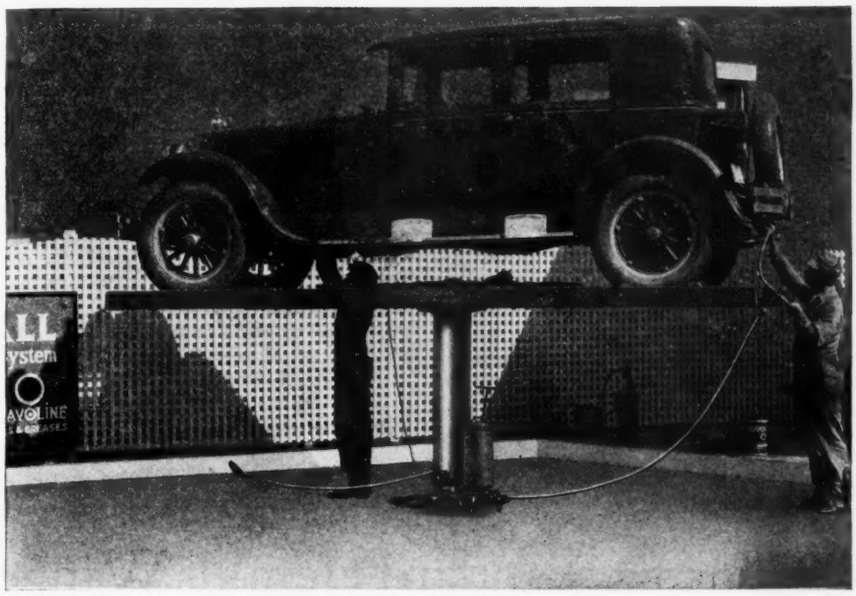
Mr. Wadsworth has had 16 years' experience in the refining and producing divisions. He began work with the Associated Oil Co. in California in 1910 following his graduation from Stanford university and spent four years in geological and statistical work. In 1914 he entered the service of the Shell Co. of California as superintendent of construction. While in this work he erected that company's Martinez refinery.

In August, 1916, Mr. Wadsworth entered the service of the U. S. Bureau of Mines and passed the next three years as petroleum engineer for that organization. As a result of his studies on fuel utilization for the bureau Mr. Wadsworth was made state administration engineer of the U. S. Fuel Administration in California during the war. He made special studies of the use of pulverized coal and colloidal fuel on the U. S. S. Gem, a submarine chaser, in addition to his work of fuel conservation on land.

Following the war Mr. Wadsworth resigned from the bureau to become consulting engineer for the Empire Gas & Fuel Co. and was later made general superintendent of Empire plants in Oklahoma, Kansas and Texas. He resigned in September 1921, to become general superintendent of refineries for Pierce.

When the depression of 1923 forced a shut down of some of the Pierce plants and a curtailment of staff and overhead, Mr. Wadsworth was made acting superintendent of the Sand Springs plant. He has remained in that position until recently when he again was promoted to general superintendent when J. J. Allinson resigned to join the Marland Refining Co.

CURTIS COMPRESSORS, HOISTS, CRANES, CAR WASH SYSTEMS, PORTABLE COMPRESSOR UNITS



Announcing a New Type of Rotating Automobile Lift

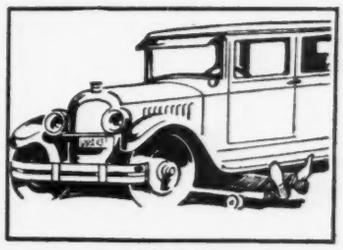
Motorists are sold on frequent lubrication. Faster methods are in demand. And here it is! The Curtis rotating auto lift that not only is a great time and expense saver as compared with the old-fashioned greasing pits and racks, but contains distinctive improvements over earlier types of lifts.

The Curtis rotating lift provides a special steel cylinder construction with a companion flange so it can be unbolted and removed to another location if desired. It is not permanently imbedded in concrete.

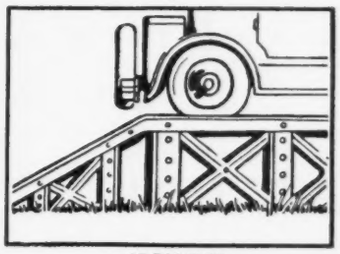
Strong I-Beam construction is used on platform instead of usual steel channels. The Curtis lift raises rapidly, but as a safety factor, lowers slowly. Safety measures are provided in other respects as well. Runways do not rest on concrete and are therefore easily rotated when in downward position so as to line up with the front wheels of the automobile.

And finally, having no underhung spider frame, the Curtis lift *requires no circular pit* which not only is an added expense but a source of annoyance and added danger to the operator who has to work in it, and to the car owner who has to step in it when entering and leaving his car.

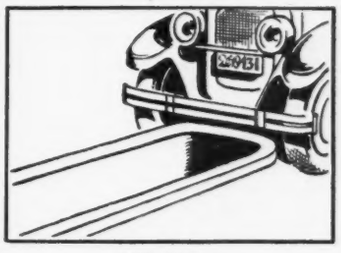
This company has been manufacturing pneumatic lifts for industrial use for 30 years. That experience has produced an automobile lift of sound design, free from all experiments or doubtful features. Users of the Curtis lift recommend it as highly preferable to the obsolete pit type. The coupon herewith will bring you full information.



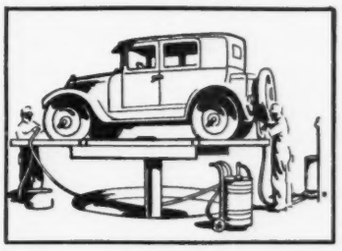
OBSOLETE
Car cannot be perfectly lubricated this way.



OBSOLETE
Woman driver fears to drive up; dislikes to climb down.



OBSOLETE
Expensive to build; collects water, oil and dirt; unsightly.



OBSOLETE
Pit easy to fall into or drag in equipment.

Made by a company rated over $1,000,000, in business 73 years, specializing for 30 years on pneumatic engineering

CURTIS Pneumatic Machinery Co.
1965 Kienlen Ave., St. Louis, Mo.
518-X Hudson Terminal, New York City.
Please send me full information about Curtis Rotating Auto Lift.

Name .....
Address .....
City ..... State .....

CURTIS Rotating Auto Lift

CURTIS PNEUMATIC MACHINERY COMPANY, ST. LOUIS, U.S.A.

Permits Allow Air Pressure On Sand in Texas Fields

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, Nov. 1.

THE introduction of air pressure into sands of north Texas fields for the purpose of increasing oil yields is made possible by the policy of the Railroad Commission of Texas, which administers the state's conservation laws, in granting permits to apply methods of this type.

Permits are issued after individual hearings participated in by interested operators and owners of adjoining leaseholds. Insofar as operating companies with headquarters at Houston have been informed, no general rule has been adopted governing the use of air pressure in oil wells in Texas.

Some time ago a permit was issued for use in the Wichita Falls district of the air pressure system operated by Dunn & Lewis, petroleum engineers, of Tulsa; and the Gulf Production Co. was also granted a permit to introduce air into the producing sand of one of the small pools in Archer county. The Gulf did not go ahead with its proposed experiments in Archer county and it is understood the Wichita Falls project is still in process of being worked out.

Any restoration of pressure practiced in the general Wichita Falls territory, as far south as Archer county, would have to be accomplished by the use of air. There is insufficient gas available in the territory for the use of such an agent in work of the kind mentioned.

Gas Used In Louisiana

IN north Louisiana, on the other hand, the Gulf interests are using gas successfully in De Soto parish, where pressure is being restored to the oil producing sands under the Kennedy, the Marston and the E. T. Robinson leases operated by the Gulf Refining Co. of Louisiana.

The wells on the Gulf's leases in De Soto parish are many of them 10 years old; and they produce only a few barrels per well per day, some of them as little as a half barrel to a barrel of oil. The introduction into the sand of gas under its own pressure has increased the Gulf's De Soto parish production from 500 or 600 barrels daily to about 800 barrels daily.

One group of wells on the Marston property of the Gulf showed an increased production amounting to about 100 per cent, but generally speaking the better recovery is described as averaging probably 50 per cent.

Gas Under Natural Pressure

THE method used by the Gulf is described as simple in that a pipe is run from the gas line into the casing of the well and the gas introduced at its natural pressure of 30 to 40 pounds.

An experiment is soon to be made in the Ferry Lake district of the old Caddo field of north Louisiana, where the Gulf operates an extensive property in its entirety. There the Gulf has high pressure gas available for introduction at the 2100-2300 foot pay level

The gas available at Ferry Lake tests up to 700 pounds pressure and will be introduced into the sand under conditions which later prove best for the purpose intended.

It is said with regard to Ferry Lake conditions that the liners were pulled and a number of wells recompleted after they had quit producing; with the idea of establishing whatever increased yield might result from working over the wells.

No advantage was found from a producing viewpoint, according to the company, which also drilled three wells in between others of normal spacing without getting worthwhile production in the newer completions. Ferry Lake wells are drilled on spacings of 660 feet.

The Ferry Lake experiments of the Gulf will be watched with all the more interest because of the conditions mentioned, which conditions are interpreted by some of the company men to mean that the sand may be "entirely drained."

Work of laying gas laterals into Ferry Lake to supply the gas used in pressure restoration work is now proceeding. Some time will be required, it is said, before the results of the experiment will be made known.

California Standard Heralds Winter Gasoline, "Wild to Go!"

SAN FRANCISCO, Oct. 30.

IF there remains a motorist in Pacific Coast states who has not learned that the Standard Oil Co. of California is selling again this winter its new winter Red Crown motor fuel "Wild to Go!", it is because that motorist can neither see nor hear.

The manner in which this winter fuel was announced to the public led Arthur Brisbane, prominent syndicate editorial writer, to say in the San Francisco Examiner:

"There is a gasoline fight in California and some companies are slashing prices. Standard Oil of California makes its modern intelligent fight with advertising.

"It buys full pages in type an inch high in the daily newspapers, announcing the best gasoline. Spending on wise advertising a small part of the money it would lose in a price-cutting war, Standard Oil of California keeps up its sales and builds new business."

In addition to many varied and unique forms of advertising, 8000 Standard Oil employes, working directly from 1500 distributing units, carried the news of the placing on sale of the winter gasoline by word of mouth to every town and hamlet, according to C. E. Persons, advertising manager for the company.

A feature of the advertising campaign this year is the use of a "mascot" in the advertising a Brownie-eyed, impish cowboy, Wild to Go, who scampers across the pages of the advertisements, adorns windshields and radiator cards.

The campaign calls for advertising in 631 newspapers in Standard of California marketing territory, California, Arizona, Nevada, Oregon and Washington.

In it will be used 14,000 dealers' posters, 3 by 5 feet in size, on roads, highways and city streets. If placed side by side these posters would make a sign eight miles long.

Three thousand tank trucks of the company will carry special posters calling attention to the new motor fuel.

One hundred thousand radiator cards are to be given motorists in certain cold weather districts.

One million cutouts, brightly colored, of the cowboy mascot are ready to distribute through dealers and service stations to be fastened to cars so the cowboy rides the radiator.

Five hundred thousand more cowboys will appear in the form of windshield stickers.

Thousands of windshield stickers, eight inches long, carry colors of pennants of colleges in the territory.

Movie slides featuring the cowboy and the new fuel will be shown in 200 theatres in the territory.

PENFLEX

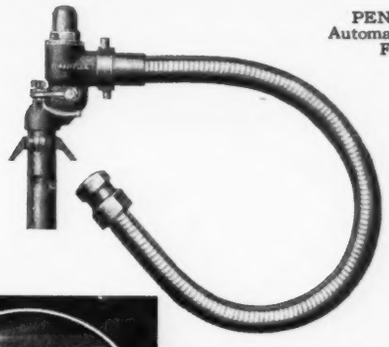
Gasoline and Oil Conveying Hose and Connections

PENFLEX Guaranteed, leak-proof Gasoline Hose *Longer life—lowest cost.*

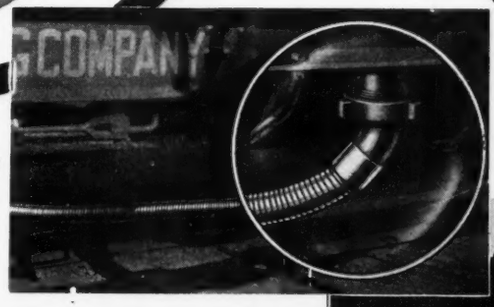
The ever increasing demand of the industry for flexible metal hose combining great strength, pressure resistance, long life and stability with a wide range of flexibility has been constantly served for many—many years by **PENFLEX**—*the pioneer manufacturer of such hose.*

Vast manufacturing facilities and volume production has built for **PENFLEX** the slogan of *"highest quality products at the most economical cost."*

It will pay you to get PENFLEX prices and specifications.



PENFLEX Automatic Barrel Filler



The most efficient and durable filler made—nationally used. Furnished either with plain galvanized PENFLEX hose or PENFLEX fabric covered, rubber insulated gasoline hose.

PENFLEX Tank Car Unloading Hose fitted with PENFLEX Couplings provide the most efficient and economical unloading connection possible. The resistance of PENFLEX *all metal* construction to severe external wear gives it a life many times that of any other type of hose.

PENFLEX Gasoline Hose, for Service Station Pumps and Tank Wagons, in sizes up to 3" I. D. Extra heavy construction of special durable fabric over thick, live rubber insulation vulcanized together and onto PENFLEX galvanized steel flexible hose.

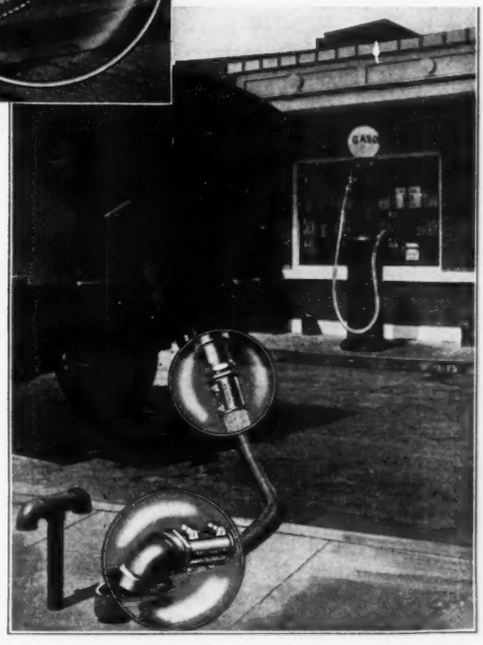
Write for these PENFLEX Bulletins

Gasoline Service Pump Hose
Bulletin No. 53 B

Automatic Barrel Filler
Bulletin No. 54 B

Tank Wagon Hose
Bulletin No. 53 B

Tank Car Unloading Hose
Bulletin No. 55 B

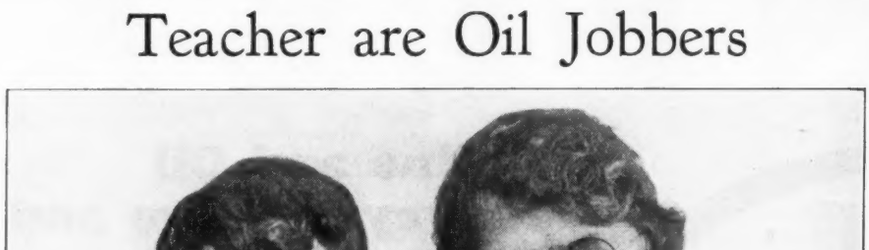


Pennsylvania Flexible Metallic Tubing Co.

72nd Street—West Philadelphia

CHICAGO **NEW YORK** **BOSTON** **NEW ORLEANS**

Woman Milliner and School Teacher are Oil Jobbers



Here are Mrs. Helen Griffin Davis and Mrs. Elizabeth J. Sowers, former milliner and school teacher respectively, who are now conducting a successful oil jobbing business at Columbus, O. under the name Sowers & Davis.

COLUMBUS, O., Nov. 1.—Like many other women today who have stepped into their husband's shoes and swivel chairs, Mrs. Elizabeth J. Sowers took over the reins of the oil jobbing business of Wood & Sowers here upon Mr. Sowers' death in 1922. She has been actively managing the business since that time, together with Mrs. Helen Griffin Davis, who bought Mr. Wood's interest after Mr. Sowers' death.

When Mrs. Sowers and Mrs. Davis took over the business, they had three filling stations. Today this partnership of two women oil jobbers conducts a business which has 30 men on its payroll, 10 filling stations, 100,000 gallons storage and two trucks. Two years ago the properties and equipment of the Majestic Oil Co. of Columbus were purchased, including three filling stations, one of which was at Worthington, O.

Mrs. Sowers and Mrs. Davis have been friends for a long time. Previous to the organization of Wood & Sowers in 1915, Mr. Sowers was with Clark & Davis, wholesale milliners of Columbus. When he died, Mrs. Davis, being the other member of Clark & Davis, laid down the buckram frame and hatter's plush, and became the partner of her former employe's wife.

Teaching school may be an entirely appropriate feminine profession, but Mrs. Sowers prefers oil. She is a graduate of Wooster University, Wooster, O., and formerly taught high school at Orrville, O.

Her first knowledge of the fundamental principles of oil marketing was obtained on the seat of her husband's truck, on which she frequently settled herself on his daily excursions to the various stations. Here she had a chance to familiarize herself with the duties of station attendants, tank wagon drivers, the testing of equipment, and to pick up many other important points in the conduct of the business.

The first service station that Wood & Sowers built was the twelfth drive-in station to be erected in Columbus, which city now has about 300 stations. The firm had three service stations in 1922 when Mr. Sowers died, and seven have been built and acquired since that time. All of the stations are at Columbus, excepting the one at Worthington, and all are equipped with grease pits.

The company has the exclusive agency in Franklin county for Sterling motor oil, manufactured by the Sterling Oil Products Co., which is owned by the Ohio Valley Refining Co., St. Marys, W. Va. It also has the Franklin county rights for Quaker State motor oil, a product of the Quaker State Oil Refining Co., Oil City Pa. It claims to be the original sponsor in the county for Oklahoma Gasoline, under which name it markets its gasoline.

Newspaper advertising is carried regularly. One advertisement in a recent edition of the "Ohio State Journal" was an appeal to the tourist who was starting out on a trip to have his motor oil changed in his home town, rather than in some other town where an unknown oil would be used. The advertisement was captioned "Long Trips Safer with Sterling" and stated "'Podunk' and 'Rhubarb Center' are not usually as well equipped to provide motor comfort to its summer visitors as your home town.

"You may be lucky to find a place where you can buy any-old-kind of motor oil, let alone a runway for changing oil.

"And 'Podunk' and Rhubarb Center' are usually just 499 miles from home. Play Safe! Fill 'er up with Sterling Oil."

Its trade mark for Sterling motor oil is the sterling mark, and this is prominently displayed in all its advertisements.

Mrs. Sowers re-married in January, 1926 and is now Mrs. W. E. Hempstead. The business is being conducted under the name of Sowers & Davis, however. Mr. Hempstead and H. G. Seiple, a nephew of Mrs. Davis, are with the firm.

Two Possibilities for New Fields In Currently Important Tests

Staff Special

LOS ANGELES, CALIF., Nov. 1

AT least three wildcats in Southern California are being watched with some interest, as two of them stand a chance of opening new fields, while the third would be an extension to Long Beach.

The Associated Oil Co.'s Cypress 1, located on about 800 acres of land about midway between Inglewood and Athens-Rosecrans fields, stopped drilling at about 4040 feet, with shows of oil and gas. A string of 11-inch was run in and cemented, but the sand filled up the bottom while bailing was in progress. A good show of gas was reported during the bailing operations.

The hole is now being cleaned out and the bailing string of casing will be removed, and further attempts made to test for both oil and gas. It seems to be generally felt that this well has proved the presence of oil and gas, but in what quantities is not known, and it is thought probable that at least another test will be necessary to decide if the Associated has located a new field with commercial production. Leases have been changing hands at rather high prices on strength of the showings.

El Segundo Gets Attention

THE E. I. Rider wildcat in the El Segundo area is also arousing a lot of attention, especially with the general report current that about 80 feet of sand had been found, with the bottom of the hole at 1800 feet. A string of pipe was cemented and the well is standing. Several dry holes have been drilled in this general vicinity, but Mr. Rider has never been convinced that there was no oil to be found there. He drilled his well with a portable rig.

The Miller-Haley wildcat, located about one mile south and west of the Long Beach extension, is standing idle at 4800 feet after a string of pipe had

been cemented. A good gas showing had been reported and the owners of the well feel that they have a gas well, but they refuse to say how much they think it will make. They secured leases on about 30 acres, and spudded the well with the hope of making a gas well of it. Long Beach is in need of gas and a ready sale can be made, after the natural gasoline is removed.

State's Output Growing

DURING the week just closed 14 new wells in various Los Angeles basin fields with one at Ventura Avenue furnished a total flush production of 13,655 barrels. Some of the new wells increased their flush while others declined, offsetting the other. The new wells brought the daily average production of California up to about 609,000 barrels with indications that there would be a further increase next week, as a number of wells are due at Huntington Beach and at least one new one at Ventura Avenue.

During the week Shell Co.'s Edison 9 at Ventura Avenue was completed for 3500 barrels at 6231 feet with about four million cubic feet of gas, giving the Shell Co. a daily production exceeding 25,000 barrels in this field alone.

At Huntington Beach, seven new wells gave a flush production of 5780 barrels or 825 barrels per well. Superior Oil Co., one of the companies joining in the California-Eastern merger, completed four wells with a total flush of 2730 barrels. Petroleum Securities Gross No. 1 was good for 1,200 barrels. All of the Huntington Beach wells are completed in the second sand between 3,900 feet and 4,000 feet.

Two new wells at Rosecrans were good for 1750 barrels, while a small new well at Dominguez completed by the Shell was good for 400.

The Brea Canyon Oil Co. in Brea Canyon in Orange county, came in for 1400 barrels at 4650 feet. The Union completed one Brea Canyon well on the Stearns lease for 600 barrels. At Richfield the Union's Chapman No. 25 was good for 225 barrels at 4613 feet on the pump. Most of these wells came in late in the week.

Sells Out to Gulf Refining

MANASQUAN, N. J.—The Hei-New Oil Co., which entered the oil jobbing and marketing business on June 1, 1925, has leased its service station and wholesale equipment to the Gulf Refining Co. for two years, with the option of purchase of the holdings within that time. The reason for selling, according to Howard Height, one of the two owners, was the desire on the part of the owners to devote full time to their other interests. Leonard T. Newman was Mr. Height's partner in the oil business.

Mr. Height is president of Howard Height, Inc., Lincoln, Ford and Fordson dealer of Manasquan.

Both Mr. Height and Mr. Newman are of Sea Girt, N. J.

FAUCETS! FAUCETS! FAUCETS! FAUCETS! FAUCETS! FAUCETS!

"Kwik-Flo" "Fast-Flo" "Max-Flo"

"Push-Pul" "Skrew" "Rench"

STEEL DRUM ACCESSORIES CORP.

BUFFALO, NEW YORK

We Want Every User of Barrel Racks in the Country to KNOW About This—

NEW

Low Cost IMPROVED

Blue Ribbon Rack

A Time and Money Saver for Filling Stations

Light
Strong
Durable
Efficient

Made in three sizes for barrels and drums

Mail the coupon or drop us a line. Let us explain the merits of this NEW device. The cost is exceptionally low, it connot break or bend and will last a life time. One man can mount a barrel of 50, 55 or 60 gallon capacity in ten seconds. There is nothing like it on the market today.

CHICAGO NIPPLE MFG. CO.
1966 Southport Ave., Chicago, Ill.

Jobbers! write for our proposition

FILL IN AND MAIL THIS COUPON TODAY

Chicago Nipple Mfg. Company
1966 Southport Ave., Chicago, Ill.
Please send me complete descriptive literature of your NEW Improved Barrel Rack.

Name .....
Address .....
City ..... State .....

Law Regulating Competitive Methods Probable in Tennessee

MURFREESBORO, Oct. 30.

CALLING upon the authority of the state to protect the Independent oil men of Tennessee against the price structure maintained by the Standard Oil Co. of Louisiana is being considered seriously by the Tennessee Independent Oil Men's Association. In fact, the association's attorney is said to be drafting a bill to be presented at the next session of the legislature which, if passed, would make gasoline a public utility. In such an event the price of gasoline to the public would be subject to the control of the State Railway Commission which functions in Tennessee as the Public Utilities Commission.

The fate of such a bill is doubtful, of course, like the fate of any bill not yet drafted but designed for presentation to a legislature which will not convene until Jan., 1927. Moreover, the force behind the movement is growing weaker day by day. The reason is simple. Tennessee oil men are making money now, under the old system of letting the Standard name the price. Last January when the "public utility" idea was popular among the Independents, none of them were making any money and some of them were headed for the industrial grave-yard at a break-neck speed. They were ready to resort to any legal means of self-preservation.

Tennessee oil men were sincere in the belief that they were being "picked on." The Tennessee tank wagon price averaged less than the refinery price plus freight for two consecutive months in the fall of 1925. In some cases Independents trucked gasoline to their customers, far and near, and sold it for less than it cost them. On top of that loss they maintained their overhead, paid their help and took their ordinary business chances. They compiled data to show that jobbers in other parts of the country were not suffering the same losses. The consequence was that they blamed the powers that named the prices and went to the courts for help.

B. E. Holman, attorney, banker and oil man of Fayetteville, Tenn., compiled a set of figures comparing oil profits in Tennessee with those elsewhere in the United States which showed startling comparisons. He selected two dozen scattered cities outside of Tennessee and 16 well-distributed towns inside the state. With these two lists of towns he showed comparative data on margins, organized it in tabular form and made it available to other oil men who wanted to see it.

How Margins Compared

THE table showed the average refinery market prices on gasoline by months for the 12 months ending April 30, 1926, in Group 3, north Texas, Shreveport and El Dorado. It also showed freight rates on gasoline by the 100 pounds and by the gallon from all of these points of origin to each of the 40 destinations (16 in Tennessee and 24 outside). The monthly prices at the four points of origin were very much alike of course, so these were averaged in one column and called an average refinery price. With these average refinery prices and the specific freight rates the average monthly cost at the 40 cities was computed and listed in a single column.

Comparison between Operating Margin to Oil Jobbing Companies

Difference between load down cost at the prevailing refinery price and the published tank wagon smaller margins prevailing in

Location	FREIGHT RATES 1st Figure in Cts. per Cwt.—2nd Cts. a Gal. FROM																							
	Group 3		North Texas		Shreve-Port		New Orleans		El-Dorado		May, 1925 Cts. Per Gal.			June, 1925 Cts. Per Gal.			July, 1925 Cts. Per Gal.			Aug., 1925 Cts. Per Gal.			Sept., 1925 Cts. Per Gal.		
											Ave. Cost	Ave. T.W.	Mar gin	Ave. Cost	Ave. T.W.	Mar gin	Ave. cost	Ave. T.W.	Mar gin	Ave. Cost	Ave. T.W.	Mar gin	Ave. Cost	Ave. T.W.	Mar-gin
Chicago, Ill.	36	2.38	41½	2.74	36	2.38	36	2.38	36	2.38	13½	18c	4½	15.38	18	2.62	14.88	18½	3.62	13.13	19	5.87	11.50	16.4	4.90
St. Louis, Mo.	29½	1.95	35	2.31	29½	1.95	29½	1.95	29½	1.95	13.07	17.6	4.03	14.95	17.1	2.15	14.45	17.1	2.65	12.70	18.1	5.40	11.07	15.3	4.23
Kansas City, Mo.	24	1.58									13.70	17.9	4.20	14.58	17.9	3.32	14.08	18.4	4.32	12.33	18.9	6.57	10.30	14.5	3.80
South Bend, Ind.	49½	3.27	52	3.43	49½	3.27	43	2.84			14.39	18.4	4.01	16.27	18.4	2.13	15.77	18.7	2.93	14.02	19.4	5.38	12.54	16.4	4.01
Indianapolis, Ind.	49½	3.27	47½	3.14	44½	2.94	36	2.38			14.39	18.2	3.81	16.19	18.20	2.01	15.77	18½	2.73	14.02	18.2	4.18	12.38	16.2	3.81
Davenport, Ia.	33	2.18	35½	2.34			36	2.38			13.30	18.5	5.20	15.18	18½	3.32	14.68	19	4.32	12.93	19½	6.57	11.30	16.7	5.40
Columbus, O.			56½	3.73	54½	3.60	43	2.84			15.09	18.5	3.41	15.84	18.5	2.66	15.59	18½	2.91	14.84	18½	3.66	12.84	17	4.16
Cleveland, O.			58½	3.86	56	3.70	45½	3.00			15.25	18.5	3.25	16	18.5	2.50	15.75	18½	2.75	15	18½	3½	13.00	17	4.00
Pittsburg, Pa.	61½	4.06	62	4.09	62	4.09	47½	3.13	62	4.09	15.22	19	3.78	17.06	20¾	3.69	16.56	21	4.44	14.81	20	5.19	13.18	17.2	4.02
Louisville, Ky.	50½	3.33	51	3.37	41	2.71	34	2.24	41	2.71	14.21	18	3.79	15.96	18¾	2.29	15.58	19	3.42	13.96	18¾	4.79	12.24	17	4.76
Lexington, Ky.	54	3.56	55	3.63	48	3.17	48	2.51	48	3.17	14.67	17½	2.83	16.42	14.50	*1.92	16.04	15	*1.04	14.31	18	3.69	12.51	15.8	3.29
Covington, Ky.	54	3.56	54	3.56	45	2.97	38	2.51	45	2.97	14.47	17	2.53	16.22	17¼	1.03	15.84	18	2.16	14.31	18	3.69	12.51	16.2	3.69
Atlanta, Ga.	64½	4.26	58½	3.86	55½	3.66	41½	2.74	55½	3.66	14.99	20	5.01	16.73	20.50	3.77	16.48	21	4.52	14.68	19½	4.82	12.74	17.8	5.06
Macon, Ga.	68	4.49	62	4.09	59	3.89	45	2.97	59	3.89	15.22	20	4.78	16.96	20.50	3.54	16.71	21	4.29	14.91	20¾	5.84	12.97	18.8	5.83
Augusta, Ga.	73½	4.85	67½	4.46	64½	4.26	50½	3.33	64½	4.26	15.58	20	4.42	17.33	20½	3.17	17.08	21	3.92	15.28	20¾	5.47	13.33	18.8	5.47
Birmingham, Ala.	55½	3.66	51	3.37	46½	3.07	34	2.24	46½	3.07	14.49	19	4.51	16.24	19½	3.26	15.94	20	4.06	14.19	19¾	5.56	12.24	17.4	5.16
Montgomery, Ala.	61	4.03	49½	3.26	46½	3.07	32½	2.15	46½	3.07	14.39	19	4.61	16.13	19½	3.37	15.88	20	4.12	14.08	19¾	5.67	12.15	17.4	5.25
Gadsden, Ala.	61	4.03	51	3.37	48	3.17	34	2.24	48	3.17	14½	19	4½	16.24	19½	3.26	15.99	20	4.01	14.19	19¾	5.56	12.24	17.4	5.16
Huntsville, Ala.	54½	3.60	58½	3.86	45½	3.00	61½	2.74	45½	3.00	14½	19½	5c	16¼	20c	3.75	15.87	20½	4.63	14.25	20¼	6.00	12.62	17.9	5.28
Jackson, Miss.	48	3.17	30½	2.01	25	1.65			30½	2.01	13.14	18	4.86	14.88	18¾	3.62	14.52	19	4.48	13.03	18¾	5.72	11.17	14.6	3.43
Vicksburg, Miss.	48	3.17	22½	1.49	20½	1.35			24½	1.62	12.86	17½	4.64	14.60	18	3.40	14.22	18½	4.28	12.73	18¼	5.52	10.49	15.9	5.41
Clarksdale, Miss.	42	2.77	39½	2.61	27½	1.82			33	2.18	13.32	18	4.68	15.07	18½	3.43	14.69	19	4.31	13.20	18¾	5.55	11.44	16.4	4.96
Shreveport, La.	42	2.77	25	1.65			19	1.25			11½	17	4.22	13¼	18½	3.48	12.87	18½	4.23	11.38	15¾	3.28	9.62	12.30	2.68
Little Rock, Ark.	28½	1.88	39½	2.60	27½	1.81	44½	2.93			13.63	17½	4.87	14.78	19	4.22	14.40	19	4.60	12.53	16½	3.97	10.92	12.9	1.98
Average Margin													4.21			4.84			3.61			5.06			4.48
Nashville, Tenn.	46½	3.07	51	3.37	40½	2.67	34	2.24	40½	2.67	14.57	18	3.43	16.32	18½	2.18	15.94	17½	1.56	14.22	16¼	2.03	12.59	14.2	1.61
Memphis, Tenn.	28½	1.88	30	1.98	27½	1.81	27½	1.81	27½	1.81	13.40	16½	3.20	15.28	17½	2.22	14.78	16	1.22	13.03	15¾	2.72	11.00	13.4	2.40
Chattanooga, Tenn.	57	3.76	51	3.37	48	3.17	51	2.24	51	3.37	14.77	18	3.23	16.64	19½	2.86	16.39	19½	3.11	14.59	17¼	2.66	12.24	14.20	2.04
Clarksville, Tenn.	46½	3.07	51	3.37	40½	2.67	44	2.24	40½	2.67	14.57	18	3.43	16.32	18½	2.18	15.94	17½	1.56	14.22	16¼	2.03	12.59	14.02	1.61
Murfreesboro, Tenn.	57	3.76	64	4.22	51	3.37	47	3.10	51	3.37	15.27			17.02			16.64			14.91			13.28		
Fayetteville, Tenn.	64½	4.26	67½	4.46	58½	3.86	50½	3.33	58½	3.86	15.76	19½	3.74	17.51	20½	2.99	17.13	20½	3.37	15.41	18¼	2.84	13.78	15	1.22
Knoxville, Tenn.	62½	4.12	64	4.22	56½	3.73	47	3.10	56½	3.73	15.63	19	3.37	17.38	20½	3.12	17	20½	3.50	15.27	18½	3.23	13.64	15.2	1.36
Winchester, Tenn.	61	4.03	67½	4.45	55	3.63	50½	3.33	55	3.63	15.63	18½	2.97	17.28	19½	2.22	16.90	19½	2.60	15.18	17¼	2.07	13.55	14	0.45
Paris, Tenn.	42	2.77	47½	3.14	36	2.38	29½	1.95	36	2.38	14.28	18½	4.22	16.03	18½	2.47	15.65	18½	2.85	13.92	16¼	2.43	12.29	13½	1.21
Dresden, Tenn.	42	2.77	48½	3.20	36	2.38	34	2.24	36	2.38	14.28	17.00	2.72	16.03	18¾	2.72	15.65	19½	3.85	13.92	17¼	3.33	12.29	14¼	1.96
Columbia, Tenn.	61	4.03	51	3.37	48	3.17	34	2.24	51	3.37	14.89	18½	3.61	16.64	19½	2.86	16.39	19½	3.11	14.59	17¼	2.66	12.77	14	1.23
Pulaski, Tenn.	62½	4.12	51	3.37	48	3.17	34	2.24	51	3.37	14.89	18½	3.61	16.64	19½	2.86	16.39	19½	3.11	14.59	17¼	2.66	12.77	14	1.23
Dyersburg, Tenn.	39	2.57	46	3.03	29½	1.95	29½	1.95	29½	1.95	13.85	17½	3.65	15.60	16.50	0.90	15.22	18½	3.28	13.60	16.50	2.90	11.97	15.50	0.53
Morristown, Tenn.	66	4.36	67½	4.45	60	3.96	50½	3.33	60	3.96	15.86			17.61			17.23			15.51			13.88		
Athens, Tenn.	62½	4.12	64	4.22	56½	3.73	47	3.10	56½	3.73	15.65			17.38			17.50			15.27			13.64		
Bristol, Tenn.	68	4.49	69	4.55	62	4.09	52	3.43	62	4.09	15.99	18½	2.51	17.74	20	2.26	17.36	20	2.64	15.64	17	1.36	13.83	15.7	1.87
Average Margin													3.36			2.45			2.75			2.53			1.48

*Loss

Opposite each of the 40 cities was shown the delivered cost, the tank wagon price and the jobbers' margin, monthly for 12 months. Gasoline prices showed at least some profit for the jobber at all the 24 towns outside of Tennessee every single month—with one exception. Dealers in Lexington, Ky., operated in the red from 1 to 2 cents in June and July, 1925, Lexington was the only exception. But in Tennessee, the table told a different story. Five of the 16 listed towns operated at a loss in October, 12 of the 16 towns showed a loss in November and one continued to show a loss through December. The flat sales loss at some of these towns exceeded 1½ cents at times. Moreover, the average margin for all 16 of the Tennessee towns was a minus quantity through October and November.

In the following table, Column "A" shows the average margin in 24 cities outside of Tennessee for the 12 months ending Apr. 30, 1926, and Column "B" shows the average margin in 16 Tennessee towns during the same period.

	"A"	"B"
May 1925	4.21c	3.36c
June "	2.84	2.45
July "	3.61	2.75
Aug. "	5.06	2.53
Sept. "	4.46	1.48
Oct. "	4.49	-0.12
Nov. "	3.76	-0.64
Dec. "	3.35	0.28
Jan. 1926	3.68	0.71
Feb. "	3.91	0.96
Mar. "	4.54	2.09
Apr. "	4.30	3.47

From the foregoing table it will be observed that margins were tight in Tennessee from September, 1925, to February, 1926 inclusive, and, although gasoline was not sold for less than cost except in October and November, the spread was insufficient to cover overhead expenses all winter.

Another interesting table found among Mr. Holman's data showed the average margin in the territories of certain other Standard Oil marketing companies during the year when the Tennessee jobbers were having the worst of their troubles. According to the table, the average margin in Standard Oil Co. of Indiana territory during that time was 4.06 cents a gallon on gasoline. In Standard Oil Co. of Ohio territory it was 3.62½ cents. In Atlantic Refining Co.'s territory it was 3.27 cents. In Standard Oil Co. of Kentucky territory it was 4.21 cents. In Standard Oil Co. of Louisiana territory, outside of Tennesse, the margin was 3.10 cents a gallon but inside of Tennessee it was 1.62 cents a gallon, average for the year.

The Court Action

THE court case is over and the complainants (the Independents) paid the costs so it is worth while to review it only briefly. It was early in February that they took the matter into court and obtained a temporary, mandatory injunction impelling all the integrated companies in the state to maintain an operating margin of 3½ cents a gallon or better. The injunction was not altogether clear in terms of the petroleum industry but the spirit of it was comprehensible and it remained in force until the last few days of May, 1926. That is when the case came on for final hearing.

The first bill of complaint was filed by the Independents in the Circuit Court of the state at Murfreesboro before Judge Floyd Estill early last February. Judge Estill issued the above-mentionel temporary, mandatory injunction in Chattanooga in the latter part of the same month.

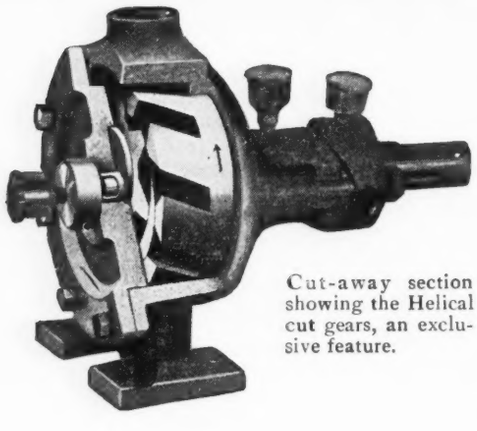
A few days later the Standard Oil Co. of Louisiana filed a motion to have the injunction set aside. The hearing on that motion took place in Columbia, Tenn., early in March before Circuit Judge Thomas B. Lytle who overruled it, leaving the original injunction in force. Again in the latter part of March, Judge Lytle was called upon by the Standard to make his ruling more clear, which he did while sitting at Fayetteville, Tenn.

Then the ruling remained in force for two months. There was a tank wagon price revision in Tennessee in May and the refinery market prices fluctuated some but the jobber's margin continued around 3 cents a gallon on gasoline until the case came up for final hearing before a master in chancery in Nashville,

in Various States and Margin in Tennessee 1925-1926

price, Compiled by B. E. Holman, banker and oil man of Fayetteville, Tenn. to show the court the Tennessee than elsewhere

LOCATION	Oct., 1925 Cts. Per Gal.			Nov., 1925 Cts. Per Gal.			Dec., 1925 Cts. Per Gal.			Jan., 1926 Cts. Per Gal.			Feb., 1926 Cts. Per Gal.			March, 1926 Cts. Per Gal.			April, 1926 Cts. Per Gal.			Cts. Per Gal.
	Ave. Cost	Ave. T.W.	Margin	Ave. Cost	Ave. T.W.	Margin	Ave. Cost	Ave. T.W.	Margin	Ave. Cost	Ave. T.W.	Margin	Ave. Cost	Ave. T.W.	Margin	Ave. Cost	Ave. T.W.	Margin	Ave. Cost	Ave. T.W.	Margin	Ave. Margin
Chicago, Ill.	11.13	16	4.87	11.75	16	4.25	12.5	16	3.50	12.19	16	3.81	12¾	17	4¼	12.38	17	4.62	12.63	17	4.37	4.28
St. Louis, Mo.	10.70	15.10	4.40	11.32	15.10	3.78	12.07	15.1	3.03	11.76	15.1	3.34	12.32	16.10	3.78	11.58	16.1	4.15	12.20	16.1	3.90	3.74
Kansas City, Mo.	10.33	12.49	2.57	10.96	13.9	2.94	11.70	14.9	3.20	11.39	15.9	4.51	11.95	16.9	4.51	11.95	16.9	5.32	11.83	16.9	5.07	4.23
South Bend, Ind.	12.02	16.4	4.38	12.64	16.4	3.76	13.39	16.4	3.01	13.08	16.4	3.32	13.64	17.4	3.76	13.27	17.4	4.13	13.52	17.4	3.88	3.73
Indianapolis, Ind.	12.02	16.7	4.18	12.64	16.2	3.56	13.39	16.2	2.81	13.08	16.2	3.12	13.64	17.2	3.56	13.27	17.2	3.93	13.52	17.2	3.68	3.45
Davenport, Ia.	10.93	16.5	5.57	11.55	16.5	4.95	12.30	16.5	4.20	11.99	16.5	4.51	12.55	17.5	4.95	12.18	17.5	5.32	12.33	17.5	5.07	4.95
Columbus, O.	12.84	17	4.16	13.59	16	2.41	13.84	16½	2.86	13.59	17½	3.91	14.29	19	4.71	13.84	19	5.16	14.21	19	4.79	3.73
Cleveland, O.	13.00	17	4.00	13.75	16	2.25	14.	16½	2.50	13¾	17½	3¼	14.37	19	4.63	14.	19	5.00	14.37	19	4.63	3.52
Pittsburgh, Pa.	12.84	17	4.16	13.46	17	3.54	13.96	17	3.04	13.87	17	3.13	14.21	17	2.79	14.09	17	2.93	14.27	17¾	3.48	3.27
Louisville, Ky.	11.96	17	5.04	12.27	17	4.73	13.08	17	3.92	12.96	17	4.04	13.33	17½	4.17	12.96	18	5.04	13.21	18	4.79	4.23
Lexington, Ky.	12.31	15	2.69	12.73	15	2.27	13.50	15	1.50	13.37	15	1.63	13.75	15½	1¾	13.42	17	3.58	13.67	17	3.33	1.96
Covington, Ky.	12.22	16	3.78	12.82	16	3.18	13.43	16	2.57	13.22	16½	3.03	13.59	17½	3.91	13.22	18	4.78	13.47	17	3.53	3.15
Atlanta, Ga.	11.61	17.5	5.89	13.42	17.5	4.08	13.75	17.5	3.77	13.55	18	4.45	13.98	18½	4.52	13.86	19	5.14	14.04	19	4.96	4.66
Macon, Ga.	12.84	18.5	5.66	13.46	18.5	5.04	13.96	18.5	4.54	13.78	18½	4.84	14.21	18½	4.29	14.09	19	4.91	14.27	19	4.73	4.83
Augusta, Ga.	13.21	18.5	5.29	13.82	18.5	4.68	14.33	18.5	4.17	14.15	18½	3.97	14.58	18½	3.92	14.46	19	4.54	14.64	19	4.56	4.44
Birmingham, Ala.	12.12	17	4.88	12.93	17	4.07	13.24	17	3.76	13.06	17	3.94	13.49	17½	4.01	13.37	18	4.63	13.55	18	4.45	4.35
Montgomery, Ala.	12.01	17	4.99	12.82	17	4.18	13.13	17	3.87	12.95	17	4.05	13.38	17½	4.12	13.26	18	4.74	13.44	18	4.56	4.46
Gadsden, Ala.	12.11	17	4.89	12.93	17	4.07	13.24	17	3.76	13.06	17	3.94	13.49	17½	4.01	13.37	18	4.63	13.55	18	4.45	4.35
Hunstville, Ala.	12.25	17½	5.25	12.87	17½	4.63	13.37	17½	4.13	13.25	17½	4.25	13.62	18	4.38	13.25	18½	5.25	13.50	18½	5.00	4.79
Jackson, Miss.	10.76	16	5.24	11.52	16	4.48	11.88	16	4.12	11.70	16	4.30	12.13	16½	4.37	11.90	17	5.10	12.15	17	4.85	4.54
Vicksburg, Miss.	10.60	15.5	4.90	11.05	15.5	4.45	11.36	15.5	3.14	11.18	15.5	4.32	11.61	16	4.39	11.60	16½	4.90	11.67	16½	4.83	4.51
Clarksdale, Miss.	11.07	16	4.93	11.69	16	4.31	12.19	16	3.81	12.07	16	3.93	12.44	16½	4.06	12.07	17	4.93	12.32	17	4.68	4.46
Shreveport, La.	9.44	12	2.56	9.87	12¼	2.38	10.38	13.4	3.02	10.25	13	2.75	10.62	13½	2.88	10.25	13½	3.25	10½	13½	3.00	3.14
Little Rock, Ark.	10.53	12.5	1.97	11.15	12¾	1.60	11.66	14¼	2.59	11.53	14.00	2.47	11.90	14½	2.60	11.90	14½	2.97	11.20	14½	3.30	3.06
Average Margin..			4.49			3.76			3.35			3.62			3.91			4.54			4.30	
Nashville, Tenn.	12.22	12.5	0.18	12.84	12¼	*0.59	13.44	13¾	0.31	13.28	14	0.72	13.70	14¾	1.05	13.32	15½	2.18	13.57	16¾	3.18	1.49
Memphis, Tenn.	11.03	11.25	*0.22	11.65	10¾	*0.90	12.40	13¼	0.85	12.09	13.5	1.41	12.65	14¼	1.60	12.28	15	2.72	12.56	15¾	2.78	1.70
Chattanooga, Tenn.	12.52	12.50	*0.02	13.33	12¼	*1.08	13.64	13¾	0.11	13.46	14	0.54	13.89	14¾	0.86	13.77	15½	1.73	13.98	17¾	3.80	1.65
Clarksville, Tenn.	12.22	12.5	0.28	12.84	12¼	*0.89	13.44	13¾	0.31	13.28	14	0.72	13.70	14¾	1.05	13.32	15½	2.18	13.57	16¾	3.18	1.49
Murfressboro, Tenn.	12.91			13.53			14.14			13.97			14.39			14.02			14.27			
Fayetteville, Tenn.	13.41	13.00	*0.41	14.03	13¼	*0.78	14.63	14.8	0.17	14.47	15	0.53	14.88	15¾	0.87	14.51	16½	1.99	14.76	18¾	3.99	1.71
Knoxville, Tenn.	13.27	13.50	0.23	13.89	13¾	*0.64	14.49	14¾	0.26	14.31	15	0.69	14.75	15½	0.75	14.38	16	1.62	14.23	17¾	3.52	1.76
Winchester, Tenn.	13.18	13.00	*0.18	13.80	13¼	*0.55	14.40	14.8	0.40	14.24	15	0.76	14.65	15¾	1.10	14.28	16½	2.22	14.53	18¾	4.22	1.52
Paris, Tenn.	11.92	12	0.08	12.56	12	*0.56	13.15	13	*0.15	12.98	13½	0.52	13.40	14	0.60	13.03	16¾	3.22	13.28	16	2.72	1.63
Dresden, Tenn.	11.92	12¾	0.83	12.54	12¼	*0.29	15.15	13½	0.35	12.98			13.40			13.03			13.28			1.95
Columbia, Tenn.	12.52	12.00	*0.52	13.33	12¼	*1.08	13.64	13.8	0.16	13.46	14	0.54	13.89	14¾	0.86	13.77	15½	1.73	13.95	17¾	3.80	1.55
Pulaski, Tenn.	12.52	12.	*0.52	13.33	12¼	*1.08	13.64	13.8	0.16	13.46	14	0.54	13.89	14¾	0.86	13.77	15½	1.73	13.95	17¾	3.80	1.57
Dyersburg, Tenn.	11.66	12.50	0.90	13.33	12.50	0.28	12.72	13	0.28	12.60			12.97			12.60			12.85			1.59
Morristown, Tenn.	13.51			14.13			14.72			14.54			14.97			14.61			15.06			
Athens, Tenn.	13.27			13.89			14.49			14.31			14.75			14.38			14.23			
Bristol, Tenn.	13.64	14	0.36	14.26	13¾	*0.51	14.82	15¼	0.43	14.64	15.5	0.86	15.07	16	0.93	14.74	16½	1.76	14.99	18¼	3.26	1.47
Average Margin..			*0.12			*0.64			0.28			0.71			0.96			2.09			3.47	1.62



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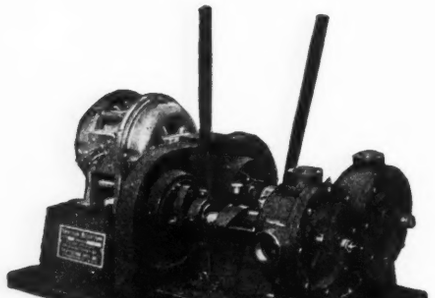

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Average Refinery Market Prices for Gasoline, By Months, for Four Refining Districts, from May 1925 to May 1926

These prices are the basis of gasoline costs in the accompanying table showing jobbing margins.

MONTH	GROUP 3			NO. TEXAS			SHREVEPORT			EL DORADO		
	Low	High	Ave.	Low	High	Ave.	Low	High	Ave.	Low	High	Ave.
May, 1925	10¼	12	11⅛	10¼	12	11⅛	10¾	12¼	11½	10¾	12¾	11¾
June, 1925	13	13	13	12¾	13	12⅞	13	13½	13¼	13¼	13¾	13½
July, 1925	12¼	12¾	12½	12½	12¾	12⅝	12¾	13	12⅞	13	13¼	13⅛
Aug., 1925	9½	12	10¾	9⅜	12¼	10.82	10½	12¼	11⅜	10	12½	11¼
Sept., 1925	8	10¼	9⅛	8	10	9	8¾	10½	9⅝	8¾	10½	9⅝
Oct., 1925	8	9½	8¾	8¼	9¼	8¾	9	9⅞	9.44	8¾	9¾	9¼
Nov., 1925	8¾	10	9⅜	9⅝	10	9.56	9¼	10½	9⅞	9¼	10½	9⅞
Dec., 1925	9¾	10½	10⅛	9⅜	10¼	9⅞	10	10¾	10⅜	10	10¾	10⅜
Jan., 1926	9⅝	10	9.81	9⅜	10	9.69	10	10½	10¼	10	10½	10¼
Feb., 1926	10	10¾	10⅜	9¾	10½	10⅛	10	11¼	10⅝	10	11¼	10⅝
March, 1926	9¾	10½	10	9¾	10¾	10	10	10½	10¾	10	10½	10¼
April, 1926	10	10½	10¼	10	10⅜	10.18	10⅛	10¾	10½	10¼	11	10⅝

late in May. Standard Oil Co. of Louisiana was the principal defendant but the Gulf Refining Co., The Texas Co., Producers & Refiners Corp., Sinclair Refining Co. and the Pan-American Southern Petroleum Corp., completed the list of defendants.

Independents Withdraw Complaint

WITH the help of the state association's officials, the attorneys for the Independents put in a voluminous amount of evidence in the first two or three days of the trial. The Independents are represented by J. J. Lynch of the law firm of Allison, Lynch & Phillips. When the plaintiff had about completed its case, seeking to have the injunction made permanent, the Standard made a general demurrer to the bill. In substance they said their operations had been quite profitable in Tennessee, as far as they were concerned, and disclaimed any interest in the alleged inability of the Independents to operate profitably at those prices.

Finally representatives of the Standard dictated a statement into the record, stating that they had no intention of operating in a manner to make the Independents lose money. On the strength of this statement the Independents withdrew their complaint and went home, and that is where the situation stands today. Seemingly the price is staying up with no injunction to hold it.

Tom S. Cooper, of Estes-Cooper Oil Co., Nashville, Tenn., formerly secretary of the T. I. O. M. A., says the purpose of the proposed legislation in Tennessee is not to make gasoline a public utility in the sense that electricity, telephone service and transportation are public utilities. His idea of the bill is that it give the State Railway Commission the right to revise the gasoline price up or down when it is too high or too low, investigating it at the request of the Independent oil men or the public. Mr. Cooper acknowledges there is no precedent for a thing like this. No other industry has ever been placed under partial supervision of the state. There is no way for such a thing to be done until a means is provided by the legislature.

B. E. Holman, head of the Elk Oil Co. and three other Independent oil companies in this section of the country, including the Consumers Oil Co., of Winchester, Tenn., is chairman of the legislative committee of the T. I. O. M. A. Mr. Holman is among the state's leading attorneys and one of the foremost financiers of Fayetteville, his home town. He is frank to say that he would not wish the state to take a hand in the operation of the oil business in Tennessee, so long as there was any assurance that price conditions might remain as they are now—wide enough to yield a reasonable return on the oil man's investment and narrow enough to give the public a fair price and keep out troublesome competition.

Sees Possible Disadvantages

"IF the oil men invoked governmental supervision," Mr. Holman said recently, "the percentage of profit which the state saw fit to allow us might not be sufficient to justify oil men to engage in a business so hazardous and competitive."

At the present writing there is no way to know what sort of a bill the Independents will propose. A good part of them want some sort of restraining legislation to protect their margin although they are a little dubious about asking that gasoline be made a public utility, even in a limited sense. Their legal adviser, J. J. Lynch, is in London this fall and there has been no meeting of the Independents to thresh out their ideas and formulate plans. G. H. Alsup, Jr., manager of Consumers Supply Co., of Murfreesboro, Tenn., and secretary-treasurer of the T. I. O. M. A. is assembling laws of other states which he hopes to use in building a protective ordinance for Tennessee. He expresses himself as willing to have gasoline prices investigated occasionally by the Railway Commission but prefers that the Standard Oil Co. continue its role as the price posting factor.

E. E. Johnson, vice president of the T. I. O. M. A. and head of the Columbia Oil Co., Columbia, Tenn., takes a conservative attitude similar to that of Mr. Holman. He wants protection against alleged secret rebating by the big integrated companies so that he can compete with them at their own prices.

The most unusual feature of the whole marketing situation local to Tennessee is the prevailing belief that the big companies, including the Standard, name one price and sell at another whenever they have to do so to procure a good account.

"These big companies think the Independents rebate," one jobber said recently. "They can't understand how the

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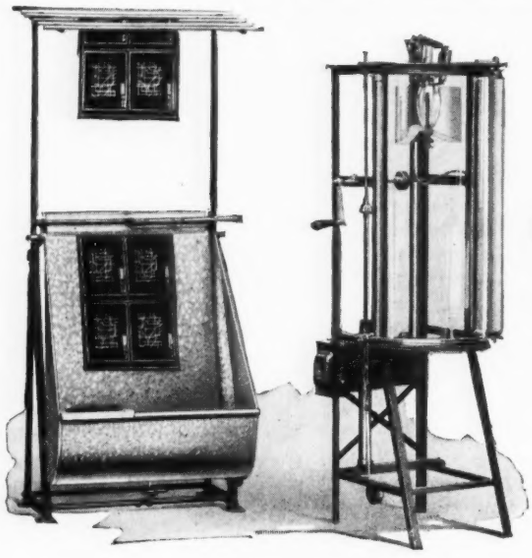

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Chicago, Ill.

PEASE
CHICAGO

Independents control the big share o the gallonage in their home towns un less they do something crooked to ge it. They think they have to make pri vate concessions to compete with us. O course some Independents probably d have some secret prices, but it is no the general thing. Most local jobber know their trade and get it on a basi of service and friendship."

New Wells Block Out More Panhandle Pay

Staff Special—by Telegraph

TULSA, Oct. 29—For the week ende October 23 the Texas Panhandle dis trict produced 161,973 barrels daily aver age from 594 wells. This was a sur prisingly small gain in production as compared with the previous week, as there was an increase of 46 producing wells. Last week, 548 wells were mak ing around 154,000 barrels.

The entire district is now producing 273 barrels per well, a loss of about 1 barrels per well over the week. Pan handle production was distributed by counties as follows:

County	Production	Wells
Hutchison	147,957	49
Gray	9,331	3
Carson	4,253	3
Wheeler	397	
Potter	35	

One of the most important of recen Panhandle wells is the Gulf Production Co's. No. 11 Johnson, in the se. cor. of Sec. 70, Block 46, H. & T. C. Survey Hutchinson county. At last reports this well was flowing 215 barrels an hour at total depth of 2897 feet. This well extends the rich producing area about 2 miles to the northwest and opens up a large area in which big wells may be expected. It topped the pay at 2860 feet.

Another interesting test is the Prairie Oil & Gas Co. No. 1 Merchant, in Sec. 37, Block 47, H. & T. C. Survey, also in Hutchinson county. This well, which was formerly known as the Big Creek and later as the Shamrock, is two feet in pay found at 2708 feet and was mak ing about 5 million feet of gas and spraying 70 barrels of oil daily. The bottom of the hole is 122 feet above sea level. The well, located on the north side of the Canadian River, is the far thest northwest producer with reference to the main field. The nearest produc tion is that in the old Whittington well in Sec. 82, Block 46, about three miles south and on the south side of the river.

In Gray county, Roxana Petroleum Corp's. No. 1 Finley, in the Chaney Survey, which is showing for a well is about 4 miles east of production in the Pampa field. This test, which is two and one-half miles north of LeFors county seat of Gray county, is reported to have 1000 feet of oil in the hole at pay from 3014 to 3019 feet.

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Salunga, Pa., April 15, 1926

Mr. H. E. Garber
Mt. Joy, Pa.

Dear Mr. Garber

A little more than a year ago you applied 36x5 Semi-Pneumatics and 36x8 Goodrich Tractors on our 2½ ton White Truck. Truck has been used every day since and tires are giving excellent service, showing very little wear. We give our tires extra hard service as we often must back into soft muddy places. We have saved enough on chains to more than pay additional cost of Tractors on the rear and the Semi-Pneumatics have paid well too, due to wonderful resiliency which means particular saving of the truck.

Since using Semi-Pneumatics we have had no trouble with leaking radiators from constant jarring commonly obtained from regular solid tires. Our driver is more enthusiastic about his work because, as he says, "I don't get shaken up by the hard bumps."

We can surely recommend your Semi-Pneumatics and Tractor Tires to anyone using solids.

Wishing you to know how well satisfied we are with your tires so you can tell your other customers, we remain

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Goodrich

"BEST IN THE LONG RUN"

Noodle Creek Well Stimulates Central West Texas Tests

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, Nov. 1.

ALTHOUGH deepening operations in the Ideal Oil Co's. No. 1 Martin-Taylor test have as yet failed to result in the discovery of a gray lime pool in northeastern Fisher county the showings found at and below the 3390-foot level have encouraged fresh wildcatting in Central West Texas.

The Ideal test, early in October, was estimated good for 400 to 500 barrels of oil at a time when a showing was made through cavings in the hole. That showing was either cased off or exhausted, but in either event did not justify first estimates made with regard to the worth of the test.

After setting 5—3/6-inch casing at 3390 feet the hole was drilled to its present depth of 3428 feet, where water made its appearance under an oil saturated lime horizon at 3411-3425 feet. Plans of the company now are to underream the 5—3/16-inch casing to shut off water and deepen.

Wells Stimulating Wildcatting

BECAUSE of the showings in the Ideal test and because of the important Winters well of the Phillips Petroleum Co., 30 miles Southeast in Jones county, near the town of Trent, wildcatting has already gained an impetus in the two counties in which the aforementioned wells are located.

Danciger Oil & Refining Co. has contracted to begin a 3000-foot test in 90 days as a consideration for the assembling of a block of acreage in southwestern Fisher county, which block consists of the following leaseholds: secs. 15, east half and southwest quarter of 16, block Y, T & P survey; secs. 4, 3, east half of 2, west half and northeast quarter of 10, north 480 acres of 11, block 23, T & P survey.

Huconey Gas Co. has blocked secs. 7, 8, 9, 12, the south half of 13, 16, 17, 18, 19, 25 and the east half of 29, block 21, T & P survey. Barnsdall Oil Co., of Tulsa, has leased in Fisher and Stonewall counties a block consisting of secs. 16, 17, 21, 22, 320 acres out of 25, 341 acres of 27, and the north three-quarters of 23 in the Austin & Williams surveys nos. 348 and 349. Sun Oil Co., Dallas, has taken up the southwest quarter of the southwest quarter of 15, the northwest quarter of the northwest quarter of 18 and the northwest quarter of the northwest quarter of 12 in the Austin & Williams survey.

Analyses of Noodle Creek Crude, Jones County, Texas

No. 1 Winters well, Phillips Petroleum Co., sec. 19, block 19, Texas & Pacific survey.
Pay level, 2510-2517 feet; A. P. I. gravity of crude, 33.7°; B. S., .05; Saybolt vis. at 70° F., 58°; Saybolt vis. at 100° F., 48°; cold test 24° F.; color—dark brown.

Atmospheric Distillation

Temp. Cut, Degrees F.	Product	Vol. C. C.		Barometer A. P. I. Grav.	Yield Pct.
Up to 392°	Gasoline	65		54.5	21.6
392-527	Kerosene	64		40.7	21.3
	Vacuum Distillation at 40 MM.				
Up to 487	Gas oil	35		34.1	11.6
487-527	Light lub. dist.	34		31.4	11.3
527-572	Med. lub. dist.	24		29.0	8.0
A. P. I. gravity of residuum				20.3	
2500 c. c. charge:	Benzine		29.9%	Engler Dist. I.B.P. –	134
Grav.—33.7°	Grav.	54.3		10% –	198
Vis. 58" at 70°	I.B.P.	134		20 –	225
Vis. 46" at 100°	E.P.	439		30 –	247
C. T.—24°				40 –	266
Color—Dark brown	Kerosene		5.1%	50 –	285
B. S.—.05	Grav.	41.3		60 –	309
	Flash	154		70 –	330
	Fire	174		75 –	342
				80 –	354
	Gas Oil		23.1%	85 –	368
	Grav.	35.0		90 –	391
	Flash	170		95 –	418
	Fire	175	Stratford Distillation Yield 28.7 O. H. 52.0	E.P. –	439
				Engler Dist. O. H. I.B.P. –	124
	Wax Distillate			10% –	202
	Grav.	30.0		20 –	238
	Flash	280		30 –	284
	Fire	325		40 –	301
	Vis 61" at	100		50 –	328
	C. T.	63		60 –	346
				70 –	366
	Bottoms		32.3%	75 –	375
	Grav.	20.2		80 –	387
	Flash	420		85 –	398
	Fire	480		90 –	410
	Vis. 120 at	210		95 –	426
	C. T.	80		E.P. –	438
	Color	Black			
	Loss		0.7%		

Gibson & Johnson have made locati for a test on the Wheeler farm, in t heirs of Robert Spears survey, No. 2 near the Jones-Fisher county bounda about six miles from the Winters d covery well of the Phillips Petroleum C

Phillips Well Holds Up

TEST wells of the Midwest Explo tion Co. and the Marland Oil C of Texas are drilling in the vicinity the Phillips-Winters discovery we which at more than a month-old is ma ing approximately 600 barrels daily 33.7 A. P. I. gravity dark brown o The Phillips well came in for 945 ba rels, initial production, on what has com to be known as the Noodle Creek stru ture, and has held up its yield remar ably well.

The Winters well is located on a su face nosing in sec. 19, block 19, Tex & Pacific survey. Its pay level is 251 2517 feet in sandy lime formation whic is generally correlated with the Cis series beds found fringing the we side of the General Ranger black lim territory.

Accompanying analyses give refinin characteristics of Noodle Creek crud as indicated by the running of sample of oil from the Phillips-Winters well.

New Publications

The Oklahoma Geological Survey Norman, Okla., has recently publishe the bulletins listed below. The law re quires that these publications be sold and the price of each, including mailing charge, is given.

Bulletin 4, Coal in Oklahoma. This bulletin covers the history, production location, etc. of the coal beds of the State, and contains besides numerous illustrations and maps of coal areas, a table of analyses of the various coals Price 85c.

Bulletin 32, Geology of Southern Ouachita Mountains, Oklahoma. This bulletin deals with the stratigraphy structure and physiography, history, geography, and economic geology of the region. Profusely illustrated with photographs, charts, and maps. Price $1.1

Bulletin 35, Index to the Stratigraphy of Oklahoma. First attempt to index all the stratigraphic formations of the State, showing nomenclator, type locality, character, thickness, occurrence, age correlation, and citations in the literature of the 125 formations in the State. This report is supplemented with a list of characteristic fossils. Price 57c.

Bulletin 37, Geology of Texas County, Oklahoma. This report is divided into chapters which deal in some detail with the geography, physiography, stratigraphy, water and mineral resources, agriculture, and history of the region. One map. Price 57c.

Bulletin 38, Geology of Beaver County, Oklahoma. Like Bulletin 37, this

report covers thoroughly the topography, geography, geology, and stratigraphy of the County. Supplemented with chapters on the fossils, water and economic resources, agriculture, and history of the region. Price 57c.

Bulletin 39, Geology of Marshall County, Oklahoma. This report deals with the physiography, stratigraphy, structure, economic geology, agriculture, history, and paleontology of the region. Illustrated with photographs, charts, and one map. Price 57c.

Bulletin 40, Oil and Gas in Oklahoma, is being issued as separate chapters. The following have been printed, and the price of each is 30c postpaid.

40-A. This report treats the location, geography, topography, stratigraphy, and regional and economic geology of each of the following counties in northwestern Oklahoma: Alfalfa, Woods, Harper, Major, Woodward and Ellis. 4 charts and one map.

40-B. Subsurface stratigraphy of northeastern Oklahoma. Chapters on the pre-Chattanooga formations including the Arbuckle limestone, Burgen sandstone, Tyner formation, Sylvan shale, etc. One map and one cross-section.

40-C. Oil and Gas in Creek County, Oklahoma. A treatise on the areal geology, stratigraphy, structure, relation of future development to structure, and oil and gas development in this prolific oil producing region. Photographs, charts, and maps.

40-D. Subsurface stratigraphy of western Oklahoma. Discussion of the various formations with special chapter on the structure of the region. Map and one chart.

40-E. Oil and Gas in Stephens County, Oklahoma. Topography, stratigraphy, structure, and production of this important oil producing county. Special chapters on the location, history, stratigraphy, structure, producing sands, future possibilities, etc. of the principal pools in the County.

40-F. Oil and Gas in Okmulgee County, Oklahoma. This county has more oil wells than any other county in Oklahoma. The entire subject is discussed. Illustrated with types of producing structures and a map showing fields.

Cities Service Refinery Heads Meet

CHICAGO, Nov. 1.—The manufacturing committee of the Cities Service Refinery organization met at the Blackstone Hotel, Chicago, Oct. 21 and 22. In addition to refinery superintendents and technical men, Harry Frueauff from the New York office, P. M. Miskell, general manager of the Empire Refineries, Tulsa, and J. S. Cordell, general manager of the Cities Service Refining Co. at Boston were present. They not only canvassed the budgets and plans for the coming year, but they heard technical talks from a number of outside engineers, including H. S. Bell, refinery engineer of New York.

Fig. 106
Screwed, Jenkins Standard Bronze Globe Valve

Fig. 108
Screwed Jenkins Standard Bronze Angle Valve

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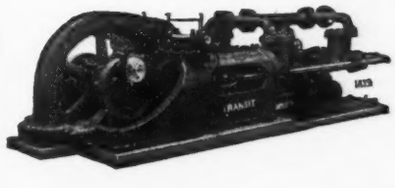

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(4) Strip to ZERO gasoline in lean oil

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Send for Bulletin 123

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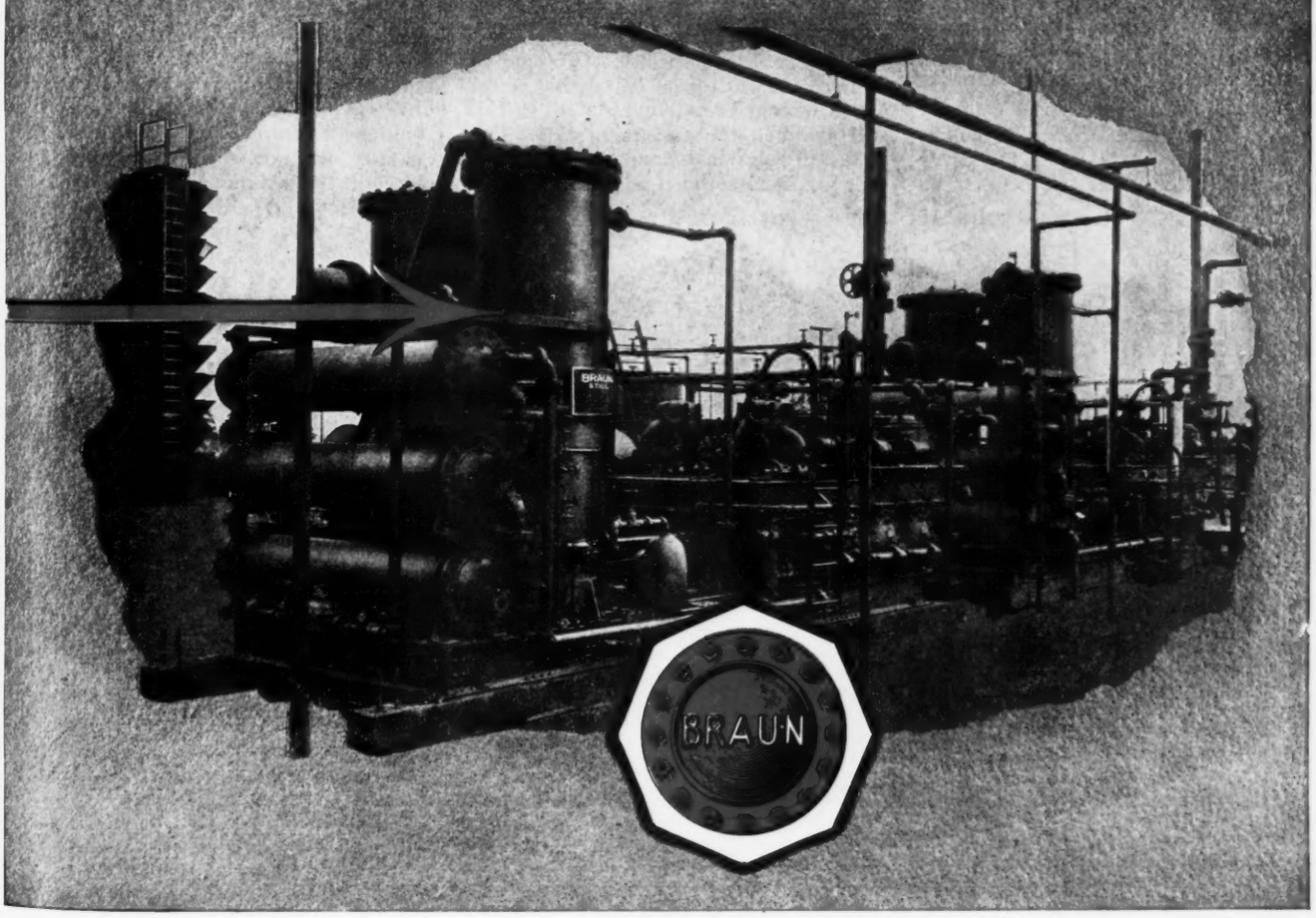
Manufacturing Mechanical Engineers

Tulsa Alhambra, Calif. Dallas

Announcement

C. F. Braun & Co., after years of research on interfacial contact apparatus, is now manufacturing Bubble type towers, including stills, absorbers, rectifiers, etc. This equipment incorporates revolutionary improvements in design and shows startling results in performance.



Color Determination of Lubricating Oils By Means of Chemical Solutions

By J. P. Carter, Senior Chemist, Atlantic Refining Co.
and
H. M. Hancock, Supt. Inspection Dept., Atlantic Refining Co.

Presented by Dr. T. G. Delbridge, Atlantic Refining Co., at Meeting of Committee D-2, American Society for Testing Materials, Cleveland, O., Oct. 15

IN 1923, the A. S. T. M. adopted the Union colorimeter as the tentative apparatus for testing the color of lubricating oils. This adoption has resulted in the increasing use of the A. S. T. M. color numbers, as determined on the Union apparatus, for the expression of color specifications. While it was intended to continue the use of the Union colorimeter for the determination of the color of finished lubricating oils being offered for sale; it was felt that there were a number of places in the refinery where a series of standard solutions in four-ounce bottles could successfully augment or replace the current method, both from a utility and economic standpoint. Locations where bottle standards might be used are filter houses, receiving houses and pump houses. In nearly all instances, it would not be necessary to provide the entire series of standards at any location, but only a sufficient number to properly control the color quality of the particular products being manufactured or handled at that point.

While it is probably easier for refinery personnel to match the color of oils with oil standards than with chemical solution standards; oil standards are unsatisfactory because: (1) The colors are not permanent and undergo a continuous change even though the standards are maintained in the dark when not in use, and (2), the standards cannot be duplicated from quantitative formulae and thus there is a recurrence of the personal equation each time that the oils require restandardizing. If a series of inorganic chemical solutions could be devised that duplicated the A. S. T. M. color numbers, it was thought that both of these deficiencies would be obviated.

Work on Colored Solutions

MR. H. V. ARNY of the College of Pharmacy of Columbia University has carried out considerable work on inorganic permanent colored solutions. Using solutions of ferric chloride, cobaltous chloride and cupric sulphate, in a solvent (or dilution) of 25 cc 32 per cent hydrochloric acid in a liter of water, he produced shades covering the entire spectrum, on the horizon of intensity which he had selected.

Dr. Arny stated (Journal of American Pharmaceutical Association, Volume 12, Number 10, October 1923) that color which matched Lovibond glasses in 1924 still matched the glasses in 1919. Our duplicate solutions show no tendency to fade or change over a period of two years, the mixing of the different strengths of solutions of the two salts causing no disturbance.

As the blue and green colors are not required to duplicate the A. S. T. M. color numbers, it was not necessary to use cupric sulphate in the preparation of any of the standard solutions. Chemically pure cobaltous chloride and ferric chloride as obtained from four reputable manufacturers were carefully analyzed. The C. P. cobalt chloride was found to contain as high as 3 per cent of nickel. since it is possible to detect even 1 per cent of nickel in a cobalt chloride solution from the green color that it imparts to the solution, it is essential to obtain cobalt chloride containing considerably less than 1 per cent nickel contamination. One of the C. P. salts analyzed contained less than 0.2 per cent nickel. This salt was used in the preparation of all subsequent solutions. The ferric chloride salts analyzed were all found to be satisfactory from an iron content basis. The samples contained inert material which necessitated filtration subsequent to making the solutions. In either instance, the quantity was not sufficient to affect the color of the solutions as compared to

Color Range Formulae

N.P.A. Color	Formulae	Per Cent	N.P.A. Color	Formulae	Per Cent	N.P.A. Color	Formulae	Per Cent	N.P.A. Color	Formulae	Per Cent
¼	$FeCl_3$ No. 1	12.74	2¼	$FeCl_3$ No. 3	25.38	4¼	$FeCl_3$ No. 4	49.51	6	$FeCl_3$ No. 4	35.44
	$CoCl_2$ No. 1	1.62		$CoCl_2$ No. 2	22.97		$CoCl_2$ No. 3	15.21		$CoCl_2$ No. 4	31.65
	Diluent	85.64		Diluent	51.65		$CoCl_2$ No. 2	23.68		Diluent	32.91
½	$FeCl_3$ No. 1	25.49	2½	$FeCl_3$ No. 3	17.46		Diluent	11.60	6¼	$FeCl_3$ No. 4	42.21
	$CoCl_2$ No. 1	[illegible]		$CoCl_2$ No. 2	33.33	6½	$FeCl_3$ No. 4	48.97		$CoCl_2$ No. 4	30.77
	Diluent	71.28		Diluent	49.21	4½	$FeCl_3$ No. 4	46.38		Diluent	27.02
¾	$FeCl_3$ No.1	38.22	2¾	$FeCl_3$ No. 3	23.95		$CoCl_2$ No. 3	30.43		$CoCl_2$ No. 4	29.89
	$CoCl_2$ No. 1	4.84		$CoCl_2$ No. 2	16.66		Diluent	23.19		Diluent	21.14
	Diluent	56.94		$CoCl_2$ No. 3	5.98	6¾	$FeCl_3$ No. 4	55.74		$CoCl_2$ No. 4	29.00
1	$FeCl_3$ No. 1	50.98		Diluent	53.41	4¾	$FeCl_3$ No. 4	52.74		Diluent	15.26
	$CoCl_2$ No. 1	6.47	3	$FeCl_3$ No. 3	30.43		$CoCl_2$ No. 3	35.66		$CoCl_2$ No. 4	28.12
	Diluent	42.55		$CoCl_2$ No. 3	11.96		Diluent	11.60		Diluent	9.38
1¼	$FeCl_3$ No. 1	25.49		Diluent	57.61	5	$FeCl_3$ No. 4	59.10	7¼	$FeCl_3$ No. 4	46.87
	$FeCl_3$ No. 2	25.00	3¼	$FeCl_3$ No. 3	40.95	7	$FeCl_3$ No. 4	62.50		$FeCl_3$ No. 3	1.59
	$CoCl_2$ No. 1	7.09		$CoCl_2$ No. 3	13.33		$CoCl_2$ No. 3	40.90		$CoCl_2$ No. 4	42.37
	Diluent	42.42		Diluent	45.72	5¼	$FeCl_3$ No. 4	53.19		Diluent	9.17
1½	$FeCl_3$ No. 2	50.00	3½	$FeCl_3$ No. 3	51.47		$CoCl_2$ No. 3	30.67	7½	$FeCl_3$ No.4	31.25
	$CoCl_2$ No. 1	7.70		$CoCl_2$ No. 3	14.70		$CoCl_2$ No. 4	7.91		$FeCl_3$ No. 3	3.19
	Diluent	42.30		Diluent	33.83		Diluent	8.25		$CoCl_2$ No. 4	56.61
1¾	$FeCl_3$ No. 2	25.00	3¾	$FeCl_3$ No. 3	25.73	5½	$FeCl_3$ No. 4	47.27		Diluent	8.95
	$FeCl_3$ No. 3	16.66		$FeCl_3$ No. 4	26.32		$CoCl_2$ No. 3	20.45			
	$CoCl_2$ No. 1	3.85		$CoCl_2$ No. 3	7.35		$CoCl_2$ No. 4	15.83	7¾	$FeCl_3$ No. 4	15.62
	$CoCl_2$ No. 2	6.32		$CoCl_2$ No. 2	23.68		$CoCl_2$ No. 3	20.45		$FeCl_3$ No. 3	4.78
	Diluent	48.17		Diluent	16.92		Diluent	16.45		$CoCl_2$ No. 4	70.86
2	$FeCl_3$ No. 3	33.33	4	$FeCl_3$ No. 4	52.63	5¾	$FeCl_3$ No. 4	41.36		Diluent	8.74
	$CoCl_2$ No. 2	12.64		$CoCl_2$ No. 2	47.37		$CoCl_2$ No. 3	10.22	8	$FeCl_3$ No. 3	6.38
	Diluent	54.03					$CoCl_2$ No. 4	23.74		$CoCl_2$ No. 4	85.11
							Diluent	24.68		Diluent	8.51

solutions made from salts which did not contain any admixed inert matter.

Army's Work Extended

AMPLIFYING the plan of Dr. Arny we prepared a large number of solutions of cobalt chloride and ferric chloride in the solvent mentioned above. We were, subsequently, able to reduce the total number to eight—four each of the above mentioned salts. These base solutions were so selected that the second solution of each series contained four times the salt content of the first and the third and fourth members similarly four times the salt content of the one preceding. The composition of the solutions were as follows:

Ferric Chloride ($FeCl_3$, $6H_2O$)		Cobalt Chloride ($CoCl_2$, $6H_2O$)	
Solution No.	Gr/cc	Solution No.	Gr/cc
1	.01126	1	.00744
2	.04505	2	.02975
3	.18021	3	.11900
4	.72085	4	.47600

Footnote 1.—
Equivalent CP Fe_2O_3 may be more satisfactory.

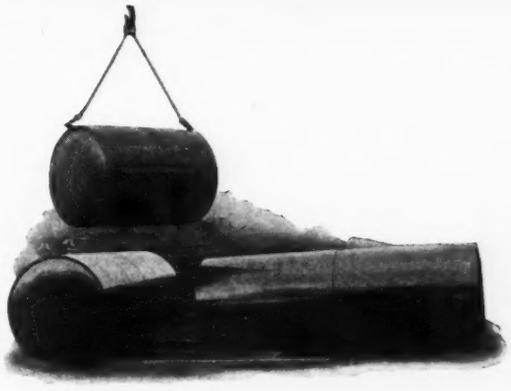
The formulae corresponding to the individual A. S. T. M. color numbers were then developed by (1), selecting a large number of four ounce bottles of the highest quality available, especially as to color and evenness of the bore. (12) Selecting nine members of the organization whose eyesight compared sufficiently with each other to consider the group as representative without introducing an endless repetition of disagreements, and (3) carefully mixing the eight primary solutions until the group of nine agreed that the A.S.T.M. color numbers as determined on the Union colorimeter had been duplicated. The quarter colors were subsequently obtained by the interpolation and extrapolation of the whole and half colors. The formulae of the entire color range will be found in table on page 102.

It has been found that the more dilute solutions (¼ to 1¼ NPA Color) show a tendency to precipitate slightly upon prolonged standing. This precipitate is colorless, composed largely of silica and probably can be attributed to the hydrochloric acid. While its presence in small quantities does not offset the accuracy of the color determination, it may be removed by rapid filtration through a Gooch crucible without affecting the quality of the solution as a color standard.

Closes Big Fuel Oil Contract

LOS ANGELES, Oct. 30—The California Petroleum Corp. announced this week the closing of a contract for the delivery to the Great Northern Railway of 14,000,000 barrels of fuel oil over a period of three years. Most of the fuel oil will be delivered from the company's refinery at Sunburst. No price was given, although it is understood the price is to be based upon crude oil postings.

SOUTH KEARNEY, N. J.—Pyramid Petroleum Products Co. recently installed additional fuel oil storage of 200,000 gallons.



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No PDM STANDARD tank on record has ever developed a leak.

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"Push-Pul"
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STEEL DRUM ACCESSORIES CORP.
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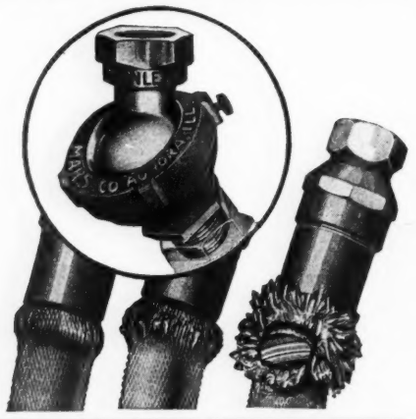

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Brave Delegates Wallow Through To Seminole Pool Gas Lift

TULSA, Oct. 30.

FOLLOWING the two-day meeting of the Petroleum Division, American Institute of Mining and Metallurgical Engineers at Tulsa, visitors were offered the privilege of trips into the field to inspect appliances for increasing production and recovery which they had heard discussed at the meeting. Weather conditions were very bad, as it rained on both days of the meeting, and the roads, already in almost impassable shape in the fields, became worse instead of better.

A few hardy souls, however, signed up for a trip to Seminole, the state's most active field, and one which is rapidly gaining a position among the major pools of the country. This adventurous party succeeded in negotiating the 130 miles between Tulsa and the field in about eight hours, including one stop to change a tire, one to take on nourishment, and one to get pulled out of a mudhole. On the way back progress was impeded by the same mudhole and another pull-out job was necessary.

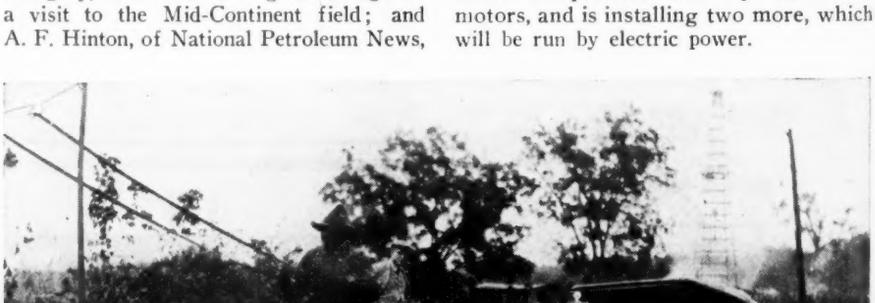
Two Wise Men

FRED REUSCH, general superintendent of the Gardner Petroleum Co., was in charge of the party. Mr. Reusch spent the summer drilling a dry-hole near Saginaw, Mich. He did the driving, but was too wise to take his own car. The car used was provided by Hal Gruber, of the Black Steel & Wire Co., who was too wise to go along. Others in the party were:—S. F. Shaw, consulting engineer of San Antonio, Tex., an authority on airlift problems; Gilbert W. Noble, research engineer at the experimental station of the Marland Refining Co., Coffeyville, Kans.; Oliver Szirmai, manager of the Mineral Oil Refining Co., Budapest, Hungary, who is absorbing knowledge on a visit to the Mid-Continent field; and A. F. Hinton, of National Petroleum News, and secretary of the Mid-Continent section, A. I. M. E.

The objective of the exposition was the Killingsworth lease of the Amerada Petroleum Corp., in which the Gardner Petroleum Co. has a one-fourth interest. The Amerada has completed one Wilcox sand well on this property and is drilling 11 wells on it and adjoining leases. The No. 1 well, which was completed Sept. 13, came in making around 6000 barrels a day. When the well had declined to around 2800 barrels it was decided to help it out with a gas lift, an experiment that has been entirely successful so far.

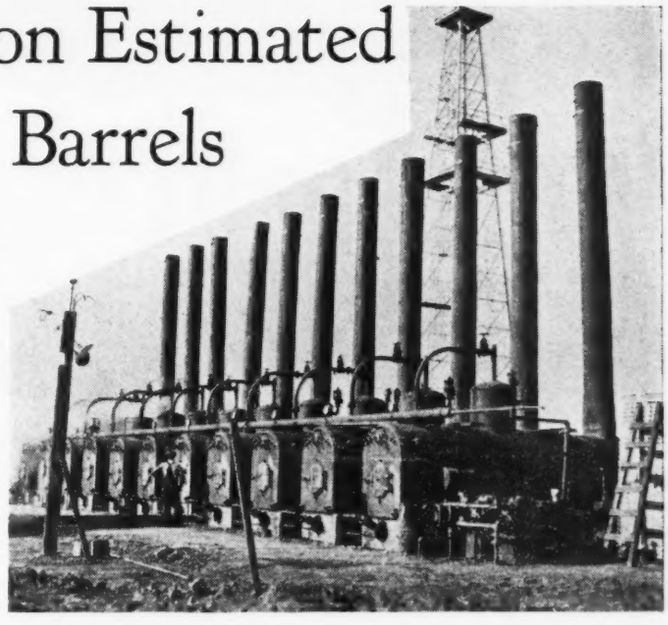
Using Gas to Boost Oil

WHEN the A. I. M. E. party was on the ground the well was flowing 155 barrels an hour, or at the rate of 3720 barrels daily, and was making about 90 barrels of water daily. It was one month old that day. Dry gas was being injected into the well under pressure of about 775 pounds, the volume being about 900,000 cubic feet daily. Gas is injected through 2½-inch tubing and the oil is flowed out through the annular space between the tubing and the walls of the casing. Total depth of the well is 4143 feet, and bottom of tubing is now at about 3800 feet. The tubing was lowered 400 feet during the past week, and production increased 400 barrels during the ensuing 24 hours. The company is buying gas used in the well from the Kingwood Oil Co., and at the same time is blowing off a large amount of gas from the well, which is so rich in gasoline that it cannot be handled through the compressors. As soon as a gasoline plant now being built has been completed, this gas will be stripped and the residue will be used in the gas lift. The company is using two Chicago Pneumatic compressors run by Waukesha motors, and is installing two more, which will be run by electric power.



Typical road scene in the Seminole, Okla. field. The car carried visitors to the Tulsa meeting of the A.I.M.E. on a trip of inspection to Seminole, but the team saved the day in this instance.

California Production Estimated To Reach 648,387 Barrels On January 1, 1927



Huntington Beach battery of boilers on Standard's Barley Patch lease, just east of 23rd Street, serving seven wells.

By William E. Green
N. P. N. Staff Writer

LOS ANGELES, Oct. 29. ALTHOUGH it has proved to be rather a dangerous practice to predict future production of oil in California, as exemplified in at least two instances, the writer has decided to make an effort to try and not get too far wrong over a short period, and he has reached the conclusion that the daily average production of crude oil in California Jan. 1, 1927 will be approximately 648,387 barrels.

In reaching this figure, field operations over the state have been taken into careful consideration, and where there appeared a doubt of an increase, a conservative decline was provided for. These figures were arrived at without taking into consideration any probable field limit extension or new field, and under the assumption that no further producing wells will be closed in. At the present, approximately 55,000 barrels of daily production is shut in, and according to present indications no further wells will be closed in, unless there should be a very decided turn in affairs in the next 10 weeks.

In the accompanying table, the first production column uses the daily average figures for the fields and districts for September, as compiled by the San Francisco office of the American Petroleum Institute. These are average figures for the entire month. For instance, the Huntington Beach production is given at 45,194 barrels daily for the month, while the production in this field at this writing is about 53,000.

Stocks Increased 1,628,355 Barrels

FIGURES on field operations, storage conditions, etc., covered in the American Petroleum Institute summary for September have just been released and the summary indicates that stocks of all products on the west coast decreased 1,628,355 barrels, thus indicating a rather healthy condition.

The September report indicates that gasoline stocks increased 123,489 barrels during the month, which in some quarters might mean other than a healthy condition. During the first two weeks of October, tankers departed from Los Angeles harbor with a total of 368,579 barrels of gasoline, routed through Panama Canal for Atlantic domestic and foreign ports.

This does not take into consideration the gasoline moving from the San Francisco district. In refinery circles it is expected that much gasoline will continue to move from California ports through the canal throughout the winter. And then, the winter season is not exceptionally hard on consumption on the west coast, as the roads are open throughout the year, and travel does not decrease to a great extent.

Light oil storage was drawn upon 1,844,865 barrels, a very healthy condition, and the greatest withdrawal in many months.

Consideration is also given to the fact that at the end of September, a total of 445 wells, an increase of 64 over the previous month, were drilling in the state, and of this total, all except 129 were drilling in proven territory.

Practically all of the increases provided for are in light oil fields, where the oil has a high gasoline content and is in especial demand. It is not expected that there will be much change in daily production in the heavy fields, as this oil is not in healthy demand.

California Production by Fields

For Sept., 1926, and estimate for Jan. 1, 1927.

Field or Dist.	A. P. I. Figures Sept., 1926	Estimate for Jan. 1, 1927
Kern River	11,612	11,500
McKittrick	5,374	5,250
Midway-Sunset	94,198	96,000
Elk Hills	34,710	34,500
Lost Hills-Belridge	4,800	5,000
Coalinga	19,411	19,000
Wheeler Ridge	1,041	11,000
Watsonville	58	58
Santa Maria	4,982	5,500
Summerland	129	129
Ventura Ave	47,952	65,000
Ventura-Newhall	6,062	6,500
Los Angeles-Salt Lake	1,904	1,850
Whittier	1,975	2,000
Fullerton	20,059	21,000
Coyete	16,482	17,000
Santa Fe Springs	47,280	46,500
Montebello	17,803	18,500
Richfield	18,027	20,000
Huntington Beach	45,194	64,500
Long Beach	97,084	90,000
Torrance	26,984	25,000
Dominguez	22,382	23,000
Rosecrans	13,602	13,000
Inglewood	42,523	40,000
Newport	109	100
Seal Beach	1,762	6,500
Totals	603,498	648,387

Fuel Market Stiffer

PRESENT stocks of heavy crude and fuel oil, carried under one head in California, reach a total of 88,572,233 barrels, an increase of 119,296 barrels. But the fuel oil market is slightly stiffer in the past six weeks, due to approach of winter, and quite a little fuel oil is moving out by tanker. During the past two weeks, a total of 857,303 barrels of fuel oil has moved out of Los Angeles harbor in tankers for Atlantic domestic and foreign ports, not taking into consideration movement out of San Francisco district. This indicates a much healthier condition than which prevailed last fall.

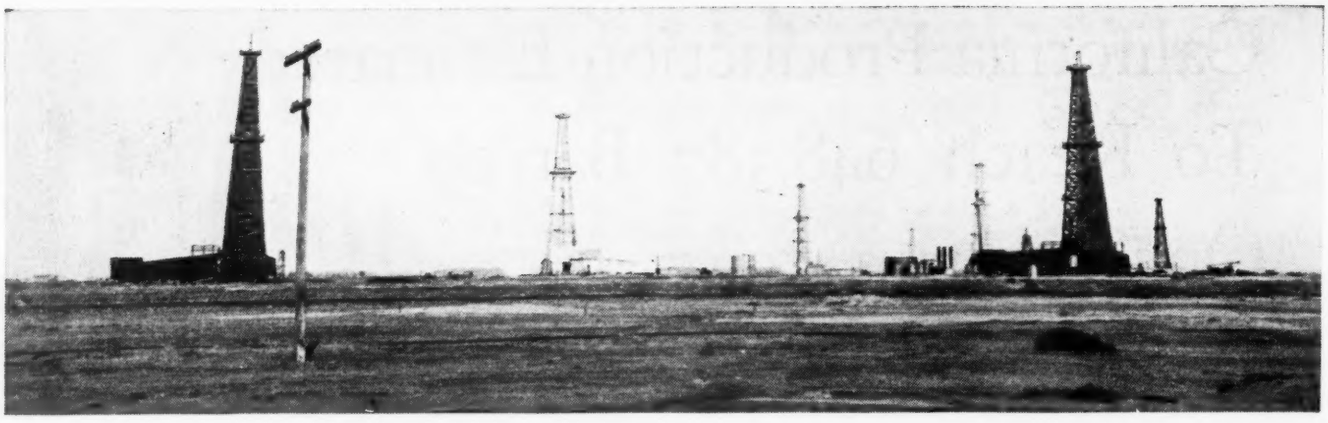
Storage of engine distillates decreased 474,279 barrels during September.

The gas lift is coming into rather general use in practically every Los Angeles Basin field, with considerable success. Many instances have been known where the production has been more than doubled by the use of this method. The producers are also making greater efforts than ever before in California to increase the production of the old wells with a minimum of expense. And many of them are successful, since the price is not any too high, and to make a real profit, they are forced to improve their methods.

A discussion of conditions in several of the individual fields, justifying the prediction of an increasing production would probably be of interest.

Ventura Avenue Climbing

OF the 40 actively drilling wells in the Ventura Avenue field, and on the fringe of the field, 22 wells this week were drilling below 4000 feet, and at least 20 of these should be completions before the end of the year. Last week, the Shell Co. completed a well at



View of Seal Beach. Well in distance to right is the discovery producer, completed by Marland Oil Co. of Calif.

6231 feet for 3500 barrels, which required only 91 days to complete from the spudding date. A check of the field this week showed eight locations and nine rigs.

As the production this week exceeds 50,000 barrels daily average and since the decline of the old wells in the field usually runs around 1000 barrels, daily average per week, the present wells will be producing 40,000 barrels a day at the end of the year. But to this production must be added the production from new wells, which should have a flush average daily of at least 2000 barrels per well, or a total of 40,000 barrels for the 20 expected to be completed. Giving these wells a decline of 10,000 barrels, which is considered very conservative, the total daily average production of the Ventura Avenue field Jan. 1 should be 65,000 to 70,000 barrels.

At the present time, the production of the field is divided about as follows: Associated Oil Company, 20,000 barrels from 18 producers; General Petroleum, 5500 barrels from 12 wells, and 25,500 barrels daily for the Shell Company from 36 wells, giving the field a total daily average of 51,000 barrels from 66 wells.

150,000,000 Feet Gas Per Day

A CHECK of the gas production indicates that the 66 will average around 2,750,000 cubic feet daily. This gives the entire field a daily gas production of 150,000,000 cubic feet, and probably the exact figure would exceed this amount.

As the natural gasoline yield of the Ventura Avenue field gas is between ¾ gallons to one gallon per 1000 cubic feet, it is seen that the field will soon be capable of producing 150,000 gallons of natural gasoline daily, as natural gasoline plants have been erected or are under construction of sufficient capacity to handle the gas output of the field.

As an instance of the number of wells which can be drilled in the Ventura Avenue field, it is only necessary to point to the undrilled land held by the Associated Oil Co. This company has under lease 4500 acres, of which close to 1000 acres is considered proven territory. Since wells could be drilled nicely one well to every six acres, this indicates that the Associaated has room for 166 wells. As 18 wells are already on production and some 10 wells are drilling, this leaves room for at least 135 wells yet to be drilled by this one company alone.

Since the Shell Co., General Petroleum and other companies with small leases can drill about as many wells, combined, as the Associated, it is indicated that around 270 wells can yet be drilled in the field, if the field is not extended in any direction. But this is not considered very likely, as it is generally believed that the limits of the field will be extended.

For the reasons stated, it is believed in some quarters that Ventura Avenue will ultimately produce more oil than Long Beach. This is believed, largely, on account of the great extent of sands being penetrated by the deep wells. In fact, no well yet has ever reached the bottom of the deep sand now being drawn upon.

Huntington Beach Gains

AT Huntington Beach, it is estimated that the daily average production Jan. 1 will be approximately 64,500 barrels against an estimated production this week of 52,000 barrels for the entire field, including 12 producers in the new extension. This allows a decline of 10,000 barrels for the wells now producing and provides for the new oil from the wells to be completed in the next 10 weeks. These figures do not include the wells completed after Oct. 14.

The present conditions in the extension at Huntington Beach show 28 rigs, 77 drilling wells, and 14 locations. Twelve wells were on production Oct. 14, with seven producers off production, either redrilling or working over. It is estimated that some 75 wells will be completed in the next 10 weeks, or by Jan. 1, and taking a very low figure of 300 barrels per well, this gives a total production of 22,500 barrels from these new wells. This gives the estimated total of 64,500 barrels for Jan. 1. The 12 wells now on production exceed 800 barrels daily production, with most of them settled. During this week several new wells have been completed with a flush of better than 1500 barrels daily. These wells are quickly drilled as the depth ranges from 3800 to 4200 feet, and the drillers know their formations.

In the older section of the Huntington Beach field, there are 15 wells drilling, with six rigs. Many of the older wells are going on the gas lift, with considerable success, thus assuring that the old wells will not show a marked decline, but with a possibility that they will decline as fast as estimated, for the field as a whole.

Seal Beach New Field

THE Seal Beach field is the latest to make its appearance in California, in fact it is the only field to be proved in Los Angeles Basin during 1926. The new field lies between Huntington Beach and Long Beach, being slightly nearer Long Beach than the other field, and becomes the six field on the general Palms-Newport uplift, running north west by south east.

The Marland Oil Co. completed the first commercial producer in the new field at Seal Beach, coming in for slightly better than 1800 barrels, and after several weeks the well is still making about 1775 barrels of clean oil.

As this is being written the Associated is drilling one well, Marland three wells and the Standard is drilling two, making six actively drilling in the new field, with three rigs up. The first producer found the oil sand at 4398 feet, and about a quarter of a mile almost south of the first producer, Marland's Selover 1 was drilling at 4521 feet the morning of October 21, without having found the oil sand. Some of the oil fraternity predict this hole will make a well, but others seem to think it is on the extreme south edge and they doubt if it makes a worth while producer.

Practically every field on the Palms-Newport uplift is long and narrow, running with the uplift, and opinion is expressed that the new Seal Beach field will also be very narrow, more so than the other fields, although some feel that it may have a length of at least two miles. This is entirely possible, taking into consideration the dry holes on the edges of the imaginary field lines.

It is estimated that this new field will be producing around 6500 barrels of oil by Jan. 1, as the completion of just three of the drilling wells as fair producers can make this amount.

The Richfield district in Orange county, where the oil has a relatively high

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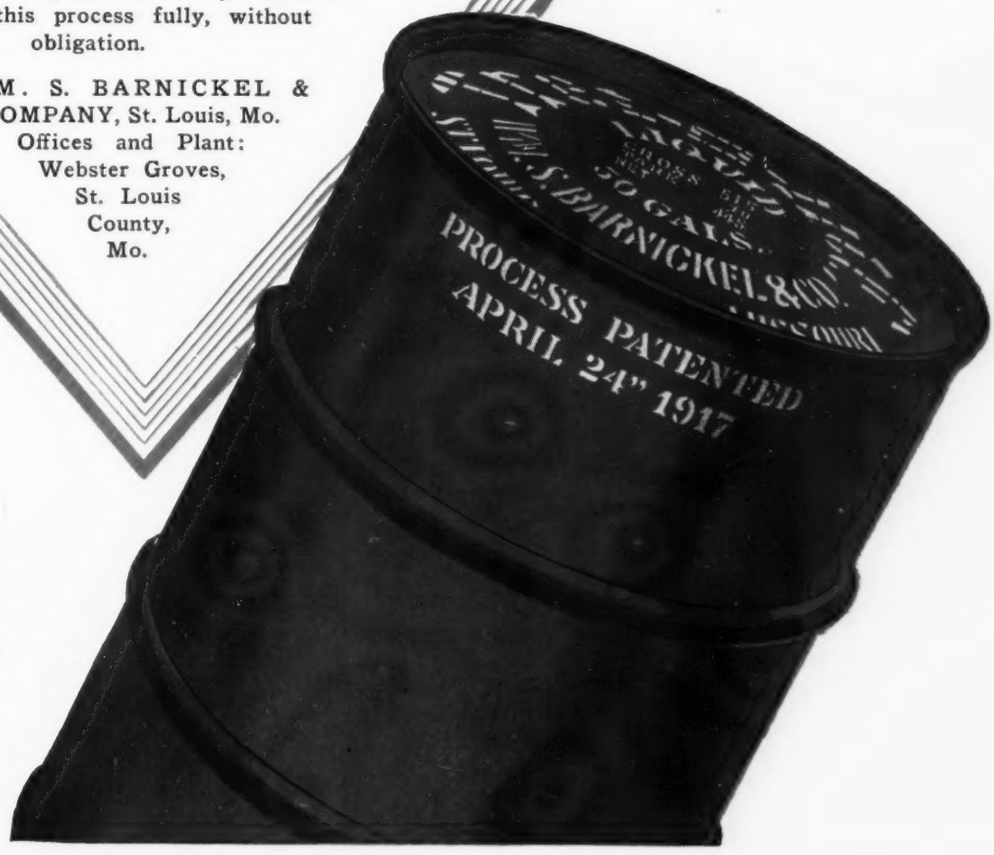

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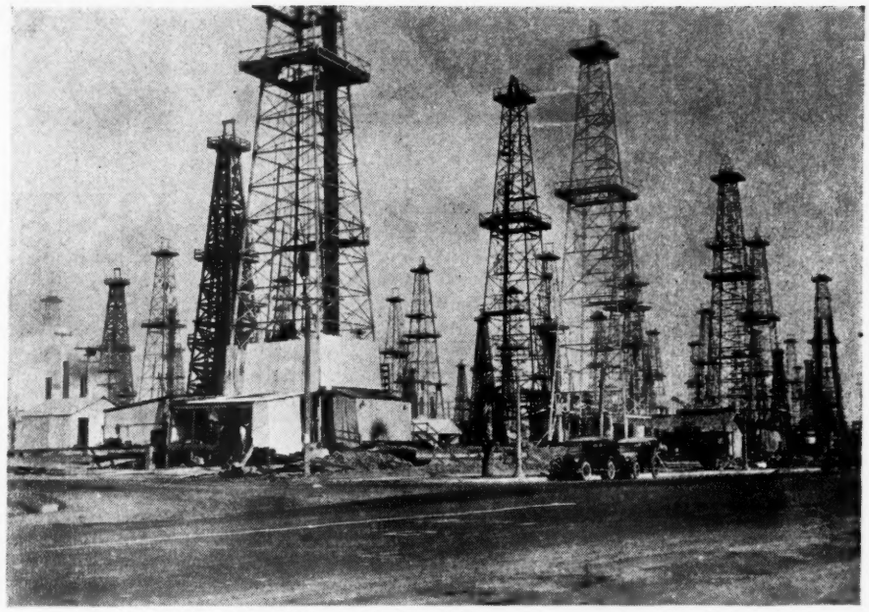


Huntington Beach showing congestion at corner of 22nd Street and Highway, with steel derricks in great majority.

gasoline content, much new work is in progress, with the Union Oil Co. leading the other companies to increase production. In this district which includes Brea Canyon, Olinda and Richfield fields, 17 wells are drilling with four new rigs. Several other rigs have been erected since the first of October.

Not only are new wells being drilled in proven areas, but old wells are being worked on and the gas lift freely used to boost production. Figures were given in the last issue of the National Petroleum News on the success the Union Oil Co. was meeting with in the use of the gas lift at Brea Canyon and Richfield, giving an instance of how production can be increased by means other than drilling new wells.

In the Santa Maria district, which includes Cat Canyon, some new work is under way and it is understood that the Union is also taking steps to increase its production in that area also. In Cat Canyon, a relatively new field, the wells are being placed on the gas lift, with increased production the result.

In the Midway-Sunset district, 47 wells are now drilling, but the wells are usually small, and since the production is heavy, not much increase is expected in the total production. Eighteen wells are also drilling in the Kern River district, this area including Poso Creek, where several wells are drilling with three wells on production. But the oil is heavy and not wanted very badly. Considerable increase could be expected from Midway-Sunset and Kern River districts if the oil was really wanted. No other districts are expected to show any material increase, but neither are they expected to show any marked decrease.

There is very little chance of a new field being uncovered in California during the next two months. Reports have it that several wildcats are, "looking good," but such reports are usually heard at most any time, or rather at all times. The Associated Oil Co. hopes to open a new field near Los Angeles between Rosecrans and Inglewood fields, which would be light oil, but this company's Cypress 1 is having water trouble, and although it has penetrated a fairly good looking oil sand, it is hardly probable that this well will be completed as a producer. It is likely that a second well will have to be drilled, unless the field force is lucky or extra resourceful.

Notwithstanding the outlook of crude oil production increase, it is thought the California situation is firm, and not much of anything could upset conditions, unless there is a drastic crude cut in the Mid-Continent, forcing a similar cut on the west coast.

No Use Restoring Pressure on This Lease

TULSA, Nov. 1.—At the recent meeting of the Petroleum Division of the A. I. M. E. at Tulsa, John R. Suman, of the Rio Bravo Oil Co., saw to it that the Gulf Coast was not left out of any of the discussions, he being the self-appointed spokesman for that low-lying part of the country.

In taking issue with the recurring plaint that only 20 or 25 per cent of oil is being recovered from the sand, Mr. Suman said he believed they are getting at least 50 per cent and in some cases 100 per cent recovery in some Gulf Coast fields.

In support of his contention, he cited one of his company's leases at Spindletop. This lease, consisting of 1½ acres, he said, has produced more than one million barrels of crude in 90 days, from sand 60 feet thick. Mr. Suman said that a reservoir built to contain this amount of oil on a surface of 1½ acres would have to have walls 80 feet high.

Therefore, they are recovering at least 100 per cent of the oil under this tract, and he added that he believed they are being drained by other companies, at that.

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

More Dubbs Units Installed

J. G. ALTHER, secretary of the Universal Oil Products Co. announces the installation of additional Dubbs units as follows:

The Standard Oil Co. of California is starting construction of seven Dubbs units at its Richmond refinery. These will be similar to the one unit that has been in use there for several months. Each unit will have a charging capacity of 3000 barrels a day and is capable of yielding 1500 barrels of gasoline a day. These are the largest cracking units in existence, Mr. Alther says.

Shell Co. of California has started installation of eight Dubbs units at its Dominguez refinery, with charging capacity ranging from 1500 to 1800 barrels a day and gasoline yielding capacity of 800 to 1000 barrels a day. This will make a total of 25 Dubbs units for the Shell of California.

The Paragon Refining Co., Toledo, O., is putting in two Dubbs units with a charging capacity of 1500 barrels a day each.

The Curacaosche Petroleum Industrie Maatschappij is installing four Dubbs units in its Curacao refinery, making a total of eight.

Pressure Still Safety Valve

THE safety valve used on the Burton stills by the Standard Oil Co. of Indiana was described by R. E. Wilson, defense expert witness in the suit brought by the government against the Patent Club. It came into the case because it is the subject of one of the Burton patents. Its construction may not be generally known to the industry.

Mr. Wilson stated that when a fire occurs in one of the modern pressure stills it is usually due to the failure of one of the tubes. Often the fire can be confined to the furnace but as a safety measure it is desirable to empty the still of vapors as fast as possible. That is the purpose of the safety valve. No condenser of practicable size would do the work, the witness said, so a 6-inch valve in conjunction with a length of 6-inch pipe 8 or 10 feet long was developed.

With an ordinary safety valve, blowing to the air, the discharged vapors, being at cracking temperature, would flash into an immense torch. It was found that by attaching the length of pipe, the vapors would be cooled enough in their passage through the pipe so that they would not flash. The valve will empty a 13,000-gallon still of vapors in about 15 minutes, Mr. Wilson said. The valve is set to blow at a pressure about 15 pounds above the working pressure of the still. An added advantage of the pipe elongation, which points straight into the air, is that it discharges the inflammable vapors well away from the fire zone. Sometimes the vapors catch fire but many times they are prevented from igniting and the fire burns itself out at the top of the stack with a minimum of damage.

All In the Clear

SPEAKING of royalties and patent suits, there is one cracking installation in an Independent refinery that does not pay the one nor fear the other. It is the 18-unit Fleming installation at the Marland refinery at Ponca City, Okla. The royalties on this were paid in a lump sum when the stills were put in—$20,000 a unit. As for patent suits, it came out in testimony of Walter Miller in the trial of the Government suit against the Patent Club that Marland bought immunity from the Standard Oil Co. of Indiana and The Texas Co.

Marland then put in the Cross process and it is altogether unlikely that he made a deal with Cross without getting a release from any infringement liability from the Cross interests. Then the Marland company put in also some Dubbs units and it is not likely this was done without getting insurance against trouble from Dubbs on the use of the Fleming process. It looks as if this particular installation is all in the clear.

To Determine Litharge Content

G. I. KIRBY, chemist of the Utah Oil Refining Co., Salt Lake City, sends the following letter. We are always glad to pass along suggestions or opinions of technical men for the benefit of their fellows. Mr. Kirby's letter follows:

"Realizing the danger of suggestions being made in duplicate by different people, I have hesitated in making the following suggestion regarding a rapid method for determining the litharge content of doctor solution.

"In order to make checks rapidly and simply we found it necessary to devise a method and finally followed the method herewith stated.

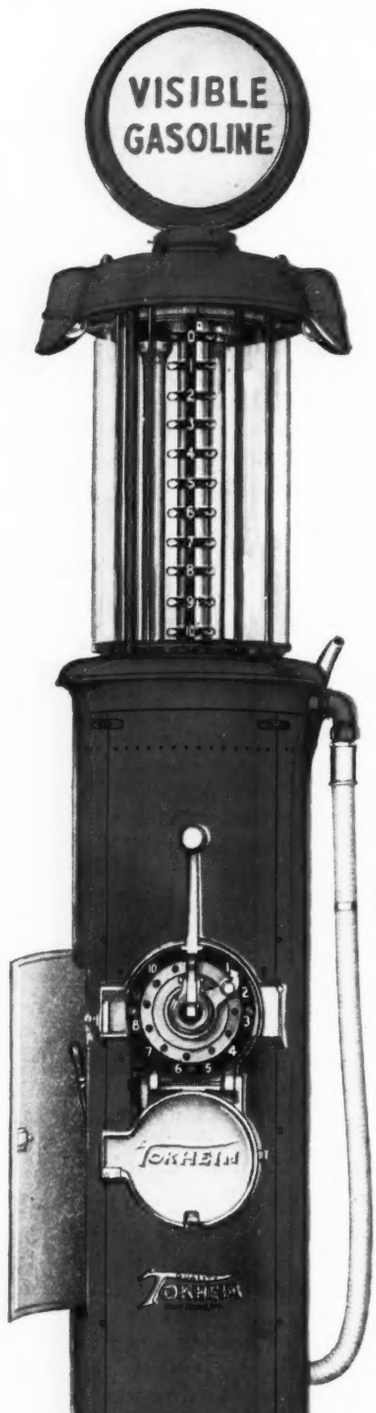
"Neutralize 25 cc of doctor solution with 59-degree sulfuric acid using methyl orange as an indicator. Be sure to carry the neutralization over to the acid side. Then place in centrifuge and allow same to precipitate. By comparing a sample of unused doctor, treated in the same manner, the percentage can be easily determined with sufficient accuracy for control work. The percentage of phenol derivatives will also be determined at the same time. The latter determination will prove very interesting."

How About Sulfur in Gasoline?

DR. GUSTAV EGLOFF of the Universal Oil Products Co. has stated several times before scientific bodies that permissible sulfur content of gasoline could be raised to 1 per cent at least without any damage to engines and to the profit of the refiner. Is he right or isn't he? If refiners are wasting money in unnecessary treating for sulfur they would certainly like to know it. Does everybody agree with Dr. Egloff? Why don't some of the chemists bring out the other side of the picture, say at the next meeting of the Petroleum Division of the A. C. S.?

Shale Oil as Fuel Coming?

CHARLES L. PARMELEE, consulting engineer of New York who has done much refinery engineering work, believes that the commercial utilization of shale oil on a large scale is nearer than is generally supposed. He thinks, however, that its first important use will be to supplant petroleum fuel oil. We know how to refine and crack petroleum oil now so why not use it to the utmost and let the shale oil take its place as fuel? he asks. He says the problems met in refining shale oil to motor fuel or lubricating oils are many and troublesome.



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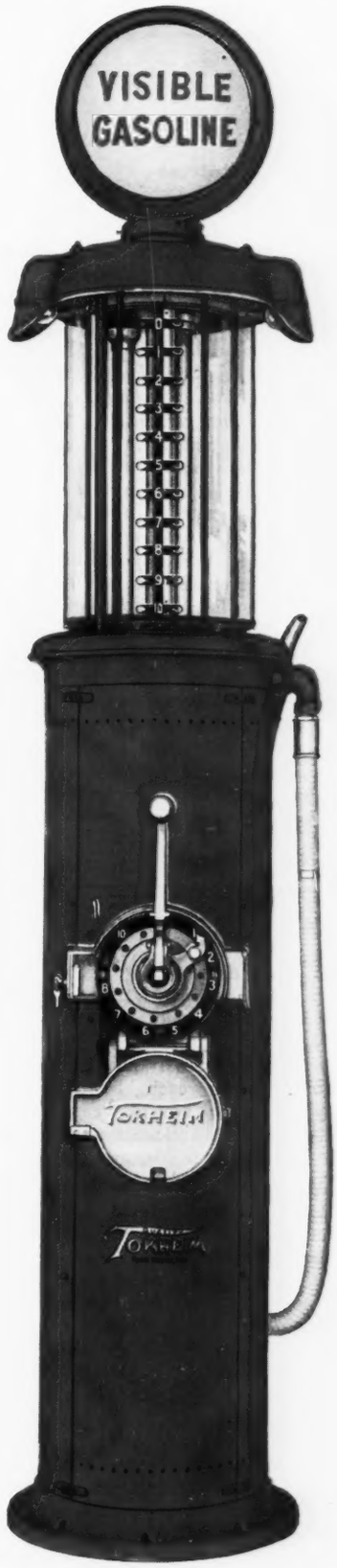

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Oil Prospects of the Northwest Basin Of Western Australia*

By Frederick G. Clapp,**
New York City

Abstract

Northwest Basin is one of seven sedimentary basins situated in whole or in part within the great State of Western Australia which covers an area about one-third the size of the United States.

The basin, which has great artesian water flows, is 400 miles long and 175 miles wide, with a population of possibly 2000 persons, the business of whom is mainly sheep farming. The formations range in age from Carboniferous to Recent, of which by far the most important are Permo-Carboniferous, Mesozoic, and Oligocene strata. Except in the Oligocene the greater part of the stratigraphic section is sandstone. No important impervious cover rocks are known and no positive seepages or other evidences of oil or gas could be found. Dips are high in the Permo-Carboniferous of the eastern marginal area, they decline to low monoclinal dips in the central areas and are again fairly high in certain coastal ranges of Oligocene age. Aside from the structure, however, no favorable fundamental conditions could be found. The basin is believed unfavorable for the existence of oil or gas in commercial quantity.

Introduction

THE oil resources of Western Australia as a whole were discussed in a recent paper[1] and those of Desert Basin specifically are the subject of a paper previously printed in this publication[2]. Since each basin forms an entity and they are not contiguous, it was deemed impracticable to attempt to cover them both in a single paper.

The Westralian studies are due to the foresight of Albert Edward Broué of Sydney, who for years had observed Australian oil prospecting, and, acting on the advice of some of the country's eminent geologists, decided to make a complete and scientific examination of the possibilities of certain extensive options which he held in Desert Basin. Mr. Broué was later joined in the undertaking by Thomas Baker of Melbourne, who purchased an interest in the Westralian oil prospecting options. The original plan for the Westralian field investigations was to cover portions of Desert Basin exclusively. After the work was commenced, however, the client was granted oil options throughout the greater part of Northwest Basin, and an arrangement was subsequently made to examine that region also. The study was made by motor reconnaissance during the months of September and October, 1924.

The writer wishes here to express thanks to Mr. Broué, who personally gave his permission to publish the results, to Prof. Sir T. W. Edgeworth David, the senior Australian geologist, for advice and helpfulness, to Messrs. E. C. Andrews, the government geologist of New South Wales, A. Gibb Maitland, the government geologist of Western Australia, W. S. Dunn and F. Chapman for paleontological determinations, and to Leo Jones of the same department for the results of a previous investigation.

The reading of this paper should be supplemented by frequent reference to the geologic map of Western Australia[3], which, with its accompanying report, has been freely referred to by the writer.

Geography and Geology of Western Australia

THE state of Australia embraces 975,920 square miles, or about one-third the area of the United States. It extends from the 14th to the 35th degree of South Latitude and its climate ranges from tropical to temperate. The rainfall is over 30 inches per annum on a bit of the southwestern coast and fully as great in a portion of the extreme north, but throughout about sixty per cent of the State it averages only about ten inches and some parts of the State are much drier and are even deserts.

Physiographically the State has previously been sub-divided into (1) the Coastal Plain, (2) the Hill Ranges, and (3) the Interior Plateaus, described in a physiographic outline of the State by Jutson[4]. Along the Indian Ocean the Coastal Plain is absent in places between Roeburne and Onslow, but in Gascoyne District of Northwest Division near Carnarvon, its width is 100 miles or more. Both the Coastal Plain and Hill Ranges are represented in Northwest Basin.

In order to maintain a consistent basis of discussion, the Coastal Plain has generally been considered practically synonymous with areas of Tertiary strata. Such anomalies exist, however, as the Cape Range, lying between Indian Ocean and Exmouth Gulf, which is of Tertiary age but over 1000 feet high, although no other land west of Hill Ranges has an equal elevation. Other inconsistencies in an assumption of the exact coincidence between Coastal Plain and Tertiary areas are that much country which is topographically inside the Coastal Plain is of Mesozoic age and that Kennedy, Carrandibby and other ranges in the eastern part of Northwest Basin are topographically part of the Interior Plateaus but nevertheless are of Permo-Carboniferous age.

The rocks of Western Australia range in age from Archean to Recent, as described in a rather complete treatise on the general geology by Gibb Maitland[5], the government geologist, from whom many details stated herein are taken and by whom a bibliography of the geology of the State is also supplied[6]. Geologic relations to other states of the commonwealth have been discussed by David[7]. Two-thirds of the State, including the major part of the central areas, consists of igneous and greatly metamorphosed and altered Archean, pre-Cambrian and ancient Paleozoic strata (Nullagine), of great complexity. These ancient areas touch the coast over vast distances, but are bordered and indented in places by artesian basins.

A table of these basins is given in the discussion of Desert Basin, and from Figure 1 accompanying that paper, it will be seen that Northwest Basin ranks third in size, having an area estimated as 32,000 square miles.

A large part of the area of Desert, Northwest, Coastal Plain, and Gulf Basins consists of Permo-Carboniferous strata, the area of Eucla Basin is Cretaceous and Tertiary, and Ord River Basin is mainly Cambrian. Minor Carboniferous and later areas exist, as (1) the Collie coal field in southwestern Western Australia and (2) an inland Tertiary area in the upper Fortesque River valley, 200 miles east of Northwest Basin, but these basins are unimportant.

When it is said that the population of Western Australia consists of only 332,000 persons, of whom 155,000 live in Perth—the capital city—it will be understood that not much may be known of the geologic or geographic details of

*Paper prepared for presentation before the American Association of Petroleum Geologists, New York meeting, November, 1926. Published in National Petroleum News by special arrangement with the Bulletin of the Association.

**Consulting Geologist, 50 Church St., New York City.

1. Frederick G. Clapp, "The Oil Problem of Western Australia," Econ. Geol., Vol. XXI., No. 5, pp. 409-30, Aug., 1926.
2. See National Petroleum News of Oct. 27, 1926.
3. Maitland A. Gibb, "A Summary of the Geology of Western Australia," "The Mining Handbook," Geol. Survey Mem. No. 1, Chapter 1, 1919, 55 pp., 1 map and 80 figures.
4. Jutson, J. T., W. A. Geol. Survey, Bull. 61, 1914, 229 pp., 119 figs., 3 plates.
5. Op. cit.
6. W. A. Geol. Survey, Bull. 1, 1898, 31 pp.
7. David, Sir T. W. Edgeworth, "The Geology of the Commonwealth," Federal Handbook of Australia, prepared in connection with the Eighty-fourth Meeting of the British Association for the Advancement of Science, held in Australia, August, 1914, pp. 241-325, 8 illus.

vast regions. The white population of the north half of the State is limited to a few thousand.

General Description of Northwest Basin

THE basin under discussion (Fig. 1) consists of a sedimentary area 400 miles in length from north to south and 175 miles in greatest breadth, bordering Indian Ocean between the Northampton mineral area on the south, and Northwest Cape and the mouth of Ashburton River on the north. This basin includes the greater part of Lyndon, Gascoyne, Murchison, and Edel districts of Northwest Division of the State, but overlaps into the north end of Southwest Division. The principal city is Carnarvon, besides which the only villages are those of Onslow and Gascoyne Junction. The area is largely covered by great sheep ranches, or "stations", which constitute the principal industry of the few hundred white inhabitants. One main "motor road" traverses the area from Onslow south to Gascoyne Junction and thence to Mullawa. Although no figures are at hand, it is estimated that Carnarvon may be a town of 1,000 persons, Onslow may have 200, Gascoyne Junction a score or less, and the average white population of a northwest sheep "station" is barely a dozen persons. The sparsely settled nature of the country will be understood when it is said that a motor trip from Broome (in northern Desert Basin) south to Mullawa (the rail head, south of Northwest Basin) over the main highway takes one past only about 35 houses outside the villages of Port Hedland, Roeburne and Onslow. Since the only industry is sheep farming, a single "station" consists of hundreds of thousands of acres and frequently carries a hundred thousand head of sheep or more.

Permo-Carboniferous Rocks of Northwest Basin

THE stratigraphy may be likened in general to that of Desert Basin, with which it was doubtless once connected, either around the north end of the intervening crystalline and metamorphic plateau or over its crest, a distance of 300 to 400 miles.

The most extensive strata in Northwest Basin are of Permo-Carboniferous age. They cover a large area of southeastern Lyndon District, the greater part of Gascoyne, the southwest corner of Lyons, about half of Murchison, and extend into the northeast corner of Victoria District. The eastern border of this Permo-Carboniferous area is intricate, with many projections into the principal valleys which drain the ancient rocks of the interior plateaus to the east. As in Desert Basin, there is a "Lower Series" and an "Upper Series" of Carboniferous and Permo-Carboniferous age, according to the nomenclature of earlier geologists. The "Lower Series" contains some limestones, calcareous sandstones, and perhaps thin shales, but no important shales were seen. The "Upper Series"

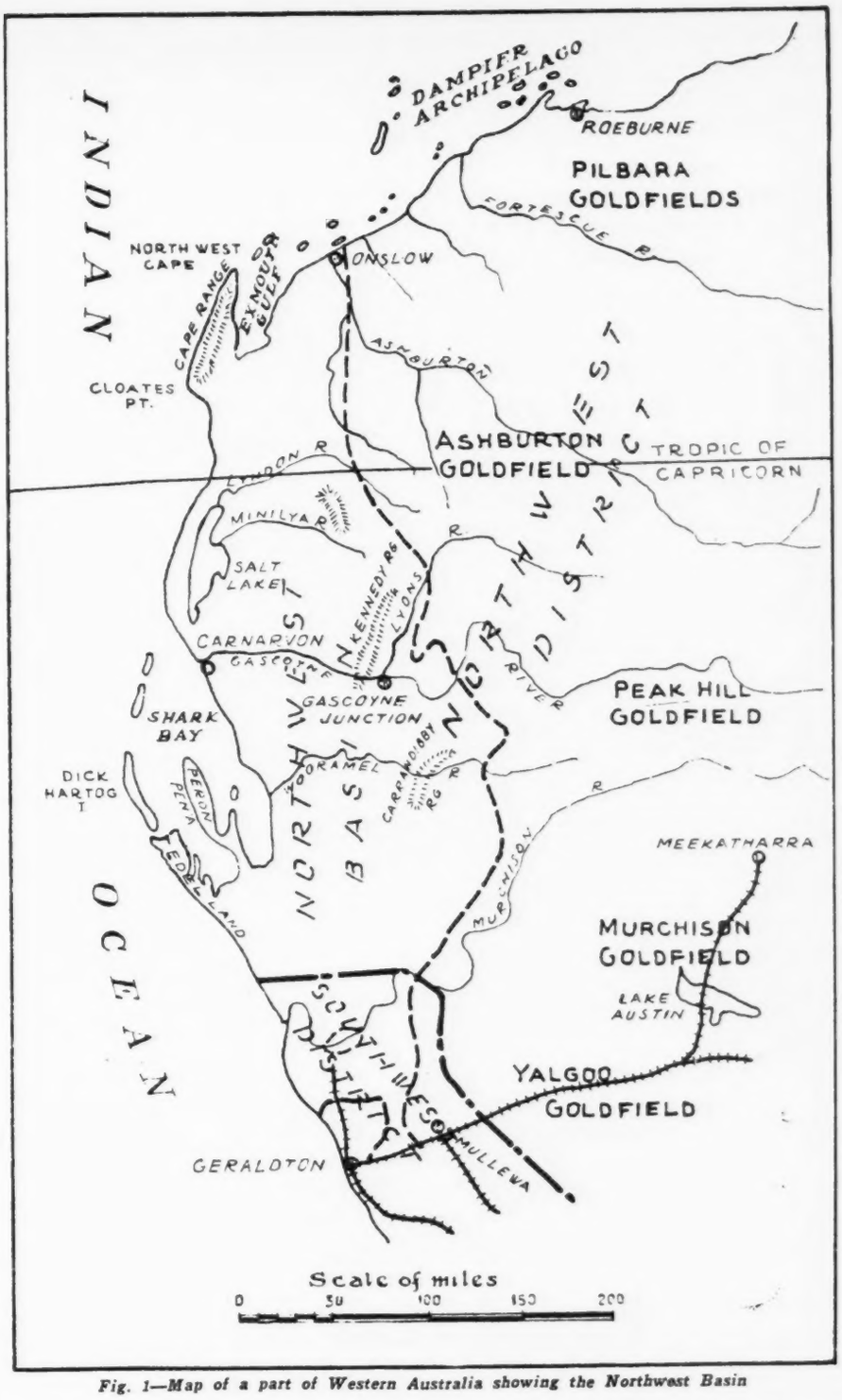

Fig. 1—Map of a part of Western Australia showing the Northwest Basin

is entirely sandstone. The combined beds are fully 2000 feet thick and probably much thicker.

The approximate top of the "Lower Series" is marked by a great tillite bed or ancient glacial deposit—case the Lyons conglomerate—which can be traced from north to south by a practically continuous outcrop more than 200 miles, constituting a prominent key bed. This tillite appears to be represented by a similar conglomerate in the Coastal Plain Basin, by striated boulders found by Talbot and others at intervals throughout the northern part of Desert Basin, and possibly (though not probably) by a light colored tillite containing rounded and striated pebbles found by the writer 400 miles east of Onslow on Oakover River in the vicinity of "Braeside Station"—an outstation of Warrawagine Station—apparently an outlier of the beds of Desert Basin.

Fossils of Permo-Carboniferous age have been obtained by the government geologists from the "Lower Series" at many places and from the "Upper Series" at one place at least, on the crest of Kennedy Range near Trig Station K-37, just north of Gascoyne River. Although the beds appear to be in perfect conformity, some inconsistency, is suggested to the writer because of the fact that the beds on Kennedy

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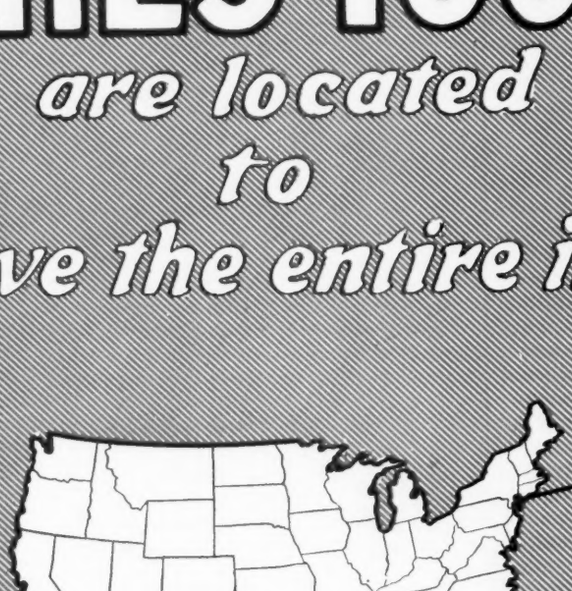

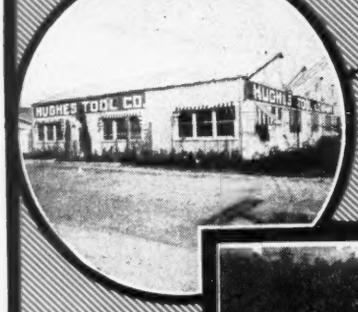

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SERVICE PLANT
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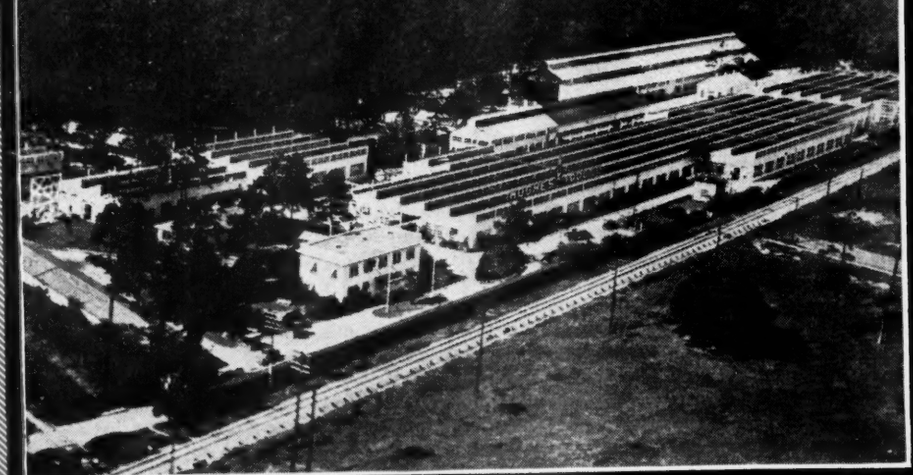

Range lie almost flat or have a barely perceptible dip to the west, whereas anticlines, synclines, and domes of moderate size exist in the belt lying in the valleys directly east of Kennedy Range and several hundred feet lower. A mid-Permian unconformity is claimed to be in total discordance with known conditions; yet it might not be surprising if one were found since one is already known in the State of Queensland. Other possible evidences of such an uncomformity exist, but whether or not it can be proved will doubtless be elucidated by later government reports.

Boulders in the Lyons conglomerate are of all sizes, and contain practically all kinds of older rocks known in that part of Western Australia. A considerable proportion of them have smoothly polished and striated faces. In one place this tillite has been uplifted in the form of a perfect dome which exists as a Lyons inlier in the younger rocks. No glaciated surfaces have been observed, but the tillite in itself is the most perfect the writer has observed in a country where tillites are common.

Although not necessary for a consideration of any particular problem discussed herein, publication of the names of identified Permo-Carboniferous species collected on the recent expedition and determined by Dun may be of value. The determinations were made through the agency of Professor David and the courtesy of Mr. E. C. Andrews, the Government Geologist of New South Wales. All the species are from the so-called "Lower or Limestone Series" of the Permo-Carboniferous and were collected on the east side of Kennedy Range southeastward to Dairy Creek Station.

List of Permo-Carboniferous species collected by the writer. (Determinations by W. S. Dunn).

Amplexus pustulosus, Hudl.
Crinoid stem ossicles.
Phyllopora, sp. undescribed
Stenopora, 2 species
Spirifera marcoui, Waagen (sp. by Ethridge, son)
Spirifera umsakheylensis (? not Davidson)
Spirifera, cf. **lata** (Ethridge and Foord, not McCoy; will be renamed **maitlandi**)
Spiriferella australasica, Ethridge, son
Cleiothyris macleayana
Chonetes pratti, Davidson
Monilopora nicholsoni, Ethridge, son
Fenestella, 2 species
Aulosteges baracoodlensis
Productus sp. nov. (named P. **clarkei**)
Productus pellus
Pleurophyllum australa, Hinde

A comparsion between the strata in the east escarpment of Kennedy Range and those in the north escarpment of Desert Basin is interesting. In both places the rock is essentially fine, grained, white or very light gray, frequently soft, porous sandstone, mainly siliceous to chalk-like, with no determinable calcareous mixture. The rock is finely stratified and contains ferruginous and cherty concretions parallel to the bedding.

The Desert Basin formations and those of Northwest Basin are overlain in a seaward direction by strata of supposedly Jurassic age, which generally have characteristics similar to the Permo-Carboniferous rocks and may not be susceptible of differentiation on lithologic evidence alone.

Strata of Mesozoic Age

MESOZOIC rocks, which appear to be mainly of Jurassic age in this basin, extend in a belt of variable width from a point in Ashburton District, east of Onslow, south across Lyndon, Minilya, Gascoyne, Wooramel, and Murchison rivers. The belt is possibly 75 miles wide near its south end where these rocks appear to overlap the granites of the Northampton mineral area. Insufficient field work has been done definitely to differentiate the Mesozoic beds everywhere.

The probable Jurassic rocks are in general fine grained, white or very light gray sandstones, with a possible thickness of 1000 feet. Some beds of Cretaceous age may be associated with them. Rocks of probable Jurassic age were encountered in the original artesian well at Pelican Hill near Carnarvon at the mouth of Gascoyne River at depths between 1200 and 1360 feet. It is possible that some beds of Jurassic or Cretaceous age may occur on the eastern slope of Kennedy Range and fossils of these ages have been found by Gibb Maitland in the vicinity of Yannarie River in the northern part of the basin.

Strata of Tertiary Age

A CONTINUOUS broad belt of probable Tertiary rocks extends from the mount of Ashburton River near Onslow, south beyond Carnarvon and Hamelin Pool, across the full width of Edel District. These beds probably constitute the entire area of peninsulas and islands in Shark Bay. So far as superficial observations are concerned, the strata do not appear greatly different from those of Jurassic age, but are in many places recognizable in the field by topographic evidence, and recently they have been specifically referred to as of Oligocene age by Mr. Chapman, who identified foraminera collected by the writer on Cape Range west of Exmouth Gulf. Fossils from the deep artesian well at Pelican Hill, Carnarvon, are also reported to show Tertiary fossils at depths from 1090 to 1340 feet.

The Tertiary and Post-Tertiary strata of Desert Basin (exact ages often in doubt there) for convenience were classified as in the following table:

Tertiary and Post-Tertiary Strata in Desert Basin

No.	Description	Probable Age	Elevation (feet)
1.	"Pindan sands"	Jurassic to Recent	0-800
2.	Red soil zone	Tertiary to Recent	0-10
3.	Consolidated sand dunes	Early Recent	0-60
4.	Raised sea-beaches of sandstone, limestone, and comminuted shells	Early Recent	0-30
5.	"Coquina" or shell rock	Early Recent	0-20
6.	Sea-level "marshes" or plains	Late Recent	0-3½
7.	Unconsolidated sand dunes and sand ridges	Present	0-500

All of these deposits except No. 2 exist in Northwest Basin. In this basin are also found at least 1000 feet of soft chalky to hard, white to gray sandstones and limestones, which attain their maximum development in Cape Range extending from Pt. Cloates to Northwest Cape, forming the backbone of the peninsula west of Exmouth Gulf and rising more than 1000 feet above sea level. These beds apparently cover a wide coastal area and are certainly in part Oligocene according to the determinations of Dun.

Geologic Structure of Northwest Basin

AS in Desert Basin, prominent structures exist, both in strata of Carboniferous age, on the east side of Kennedy Range, and in the Oligocene sediments of the northwest coast. In the last mentioned belt a pronounced anticline forms the peninsula west of Exmouth Gulf, terminated by Northwest Cape and rendered almost inaccessible by recent dune areas and minor folds which may be repeated at intervals southeast to the vicinity of Winning Pool. East and north of Kennedy Range, in the eastern part of the basin, less prominent but none the less true anticlines were found—one noticeable dome involving a core of Lyons conglomerate. Any or all of these structures might be of interest if other conditions were even slightly favorable, but, as in Desert Basin, no other fundamental factor appears satisfactory.

Similarities Between Northwest and Desert Basins

ONE might suppose that Northwest and Desert Basins have few characteristics in common. For instance, they are separated by a belt of Pre-Cambrian rocks 350 miles wide where narrowest and rising in places over 4000 feet above sea-level. Desert Basin is roughly quadrilateral in shape, with its longer dimension approximately at right angles to the coast; whereas Northwest Basin, like Coastal Plain Basin farther south, constitutes a belt, nowhere over 175 miles wide, parallel to the coast from Onslow to Murchison River.

As the name implies, Desert Basin is composed largely of a desert. Enormous areas of it are barren and sandy, whereas the greater part of Northwest Basin is prosperous pastoral country in which two score artesian wells have been sunk, yielding some of the greatest flows of water in the Commonwealth and proving an area of perhaps 15,000 square miles to have artesian possibilities. Nevertheless, Northwest Basin is not devoid of uninhabitable areas. There is no highway south along the coast from Carnarvon to Geraldton, for

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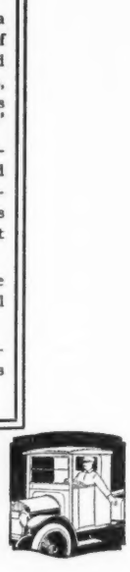

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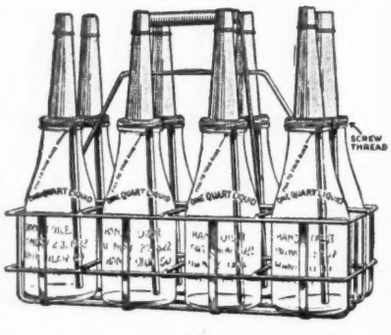

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impassable sand hills cover much of the country between Hamelin Pool Post Office (115 miles by air line south of Carnarvon) and Geraldton in Coastal Plain Basin. Another extensive sandy area is that southwest of Exmouth Gulf, between it and Cape Range. The great dunes here were crossed with difficulty in a Dodge car.

Aside from their similar barren conditions, Northwest and Desert Basins are similar in that each has a great escarpment, which, in the case of Northwest Basin, bounds Kennedy and Carrandibby ranges on the east. As in Kimberley District, so in Gascoyne District of Northwest Basin, the escarpment rises vertically 200 to 300 feet higher than the valley and is apparently inaccessible to vehicle or animal at any place from its south end near Gascoyne River to a point on Merlingleigh Station, a distance of about 50 miles. North and south from Kennedy Range its topographic features are repeated at intervals, represented by a smaller range of hills directly south of Gascoyne River, by Carrandibby Range 50 miles south, and probably also by Moogooloo Range north of Minilya River, so that, throughout a distance of 150 miles, the escarpment feature is prominent in some degree for intermittent but considerable distances.

As with the Plateau escarpment in Desert Basin, so with that of Kennedy Range in Northwest Basin, the strata consist of fine grained, white non-calcareous sandstones, which dip west at angles of less than 5 degrees with only slight reversals. No limestones or shales are known in either escarpment. Few fossil localities exist. No reverse dip of more than a fraction of a degree, and this for a short distance only, is visible in the face of the Kennedy Range. As is the case with the southwest slope of the Desert Basin plateau, so with Kennedy Range, the land descends gradually, from an altitude of approximately 1000 feet on the escarpment, westward to the Coastal Plain several hundred feet lower. Somewhere near the west base of Kennedy Range the Permo-Carboniferous rocks pass beneath the Jurassics.

Thus the north escarpment of the Interior Plateaus of the Desert Basin of southern Kimberley Division appears similar topographically, lithologically, stratigraphically, to that forming the east face of Kennedy and Carrandibby Ranges in Gascoyne and Lyndon districts of Northwest Division. It is evident that the strata of Northwest and Desert Basins are contemporaneous and were once probably connected and that similar stratigraphic and structural conditions prevail in each.

The "Cape Range" Formation

AN unexpected discovery was in the "Cape Range," where white limestones and interstratified chalky beds form a prominent anti-cline rising from below sea-level on the west side of Exmouth Gulf to a height of more than 1000 feet in the center of the range, intersected by deep gorges extending several miles into it. Some of the chalky beds are full of Oligocene types of Lepidocyclina and Cycloclypeus, identified by Mr. F. Chapman from my foraminiferal collection. The beds lie flat on top of the range and dip 8° E. on the lower east flank.

East of the anticline of Cape Range other anticlines were found, one of which, on Giralia Station, 20 miles east of Cape Range, has a height of at least 300 feet and a breadth of 10 miles.

Large areas along the coast and for some miles back from it between Northwest Cape and Hamelin Pool may constitute part of the same formation.

Some Adjacent Sedimentary Areas

AN interesting section 7 miles in breadth, consisting of apparently ancient rocks, lies 35 to 42 miles east from Onslow. More or less continuous outcrops were passed on a northeast-southwest traverse, all dipping at an average angle of 20° N. 60° E. These strata, if not duplicated by unseen faults, appear to be 13,000 feet in total thickness. They consist of rather uniformly hard, light gray, thick-bedded quartzites, with some medium-grained sandstone.

Although this belt of outcrops appears to lie on the strike of the Mosquito Creek beds (pre-Cambrian) mapped less than 100 miles to the south, the rocks are similar in character to many Permo-Carboniferous rocks where surface-hardened. The locality was not observed to be cut by quartz veins or by granite, as were the Mosquito Creek beds seen elsewhere, and the only intrusions noticed was a large dike of basale apparently occupying the center of an anticlinal fold just west of Peedamullah Homestead.

Similar gray quartzites, also of great thickness, seen in the area between Nanutarra and Uaroo Homesteads, south of Ashburton River, are underlain by at least 2000 feet of schists. The formation south of Nanutarra is folded into several great anticlines in the center of which valleys have been eroded; but in that area the quartzites and schists are intruded by quartz veins, granites and gneisses.

Reservoir Rocks, Cover, and Petroliferous Content

THERE is no question of porosity, for thousands of feet of white or gray sandstones exist, similar to those in Desert Basin, suitable for carrying oil under other circumstances. They are mainly siliceous and comprise nearly the entire Permo-Carboniferous portion of the stratigraphic section to the general exclusion of shales. Few, if any, cover rocks are known, and only a few feet of shale were actually seen or authentically reported in the basin. Thus it seems a physical impossibility for oil to have remained in these rocks even if it ever formed. The Oligocene limestones may have formed oil, which, however, is not supposed to have remained in quantity, for these limestones are everywhere open and porous and, so far as observed, are not over-

lain by shales or other impervious rocks.

Enquiries were made for reports of actual oil, and in one or two instances somewhat vague statements were received of oil showings on the outlets of artesian wells, but in every observed case the substance was found to be merely a trace of iron oxide or vegetable scum.

Wells Drilled to Date

NO wells have ever been drilled in search of oil. Nowhere among the two score, more or less, artesian wells was any trace of oil or natural gas found*. These wells range from a few hundred to more than 3000 feet deep and one yielded as much as 2,000,000 gallons of water a day[8]. In addition, a few of them furnish definite information relative to stratigraphic conditions and serve to confirm conclusions arrived at from surficial studies. It is true that in some cases shaly beds were reported; but in that region any fine grained material is generally termed "shale," hence such reports were not considered important from the standpoint of oil occurrence. Moreover, if oil existed in commercial quantity anywhere in Northwest Basin, it would seem that some trace of oil or gas should have been found in one or more of the numerous wells.

The following list gives a fair idea of the nature of the wells:

Summary and Conclusions

NOT a trace of oil is known ever to have been found in any of the two score artesian wells drilled between one and three thousand feet deep. Only traces of natural gas have been reported in any of them and these could not be substantiated at the time of the writer's inspection. So far as observed, the shales in Northwest Basin are entirely inadequate to act as a suitable cover to hold oil in the thousands of feet of sandstones that exist there, even if oil ever existed in these rocks. Sources of origin may have existed but are of theoretical interest only. Structures exist, but these are inconsequential since other fundamental conditions are unfavorable.

*The nearest to actual gas occurrences were several reported "flashings" of gas in water emerging from flowing wells; but several of these were tested with a match and not found to flash noticeably at the time.

8. Reports of A. Gibb Maitland in publication of the First, Second and Third Interstate Conference on Artesian Water, with accompanying maps, sections and other illustrations.

9. Mainly abstracted from a. Gibb Maitland, Report of Second Interstate Conference on Artesian Water, Brisbane, 1914, pp. 252-3 (later issues not available).

Partial List of Artesian Wells of Northwest Basin[9]

No.	Name	Locality	Date Completed	Depth in feet	Amount of flow*
1.	Onslow Bore	Onslow	1899	1,729	120
2.	Pelican Hill	Carnarvon	1903	3,011	515,000
3.	Butcher's No. 1	Near Carnarvon	1904	1,650	1,000,000
4.	Grierson's Tank	Carnarvon	1905	1,510	93,000
5.	Burt's No. 1	Brickhouse Sta.	1905	2,632	630,000
6.	Burt's No. 2	Brickhouse Sta.	1906	1,546	1,096,000
7.	Butcher's No. 2	Brickhouse Sta.	1907	1,813	494,000
8.	Butcher's No. 3	Brickhouse Sta.	....	1,460	500,000
9.	Burt's No. 3	Carnarvon	1907	1,281	1,100,000
10.	Burt's No. 4	Near Canarvon	1906	1,391	400,000
11.	Snook & Waldeck	Near Canarvon	1906	1,461	470,000
12.	Minilya Sta. No. 1	Yankee Tank	1907	1,000	750,000
13.	Minilya Sta. No. 2	Gnabarnarra	1908	1,408	600,000
14.	Morell & Hearman	Carnarvon	1908	1,404	1,000,000
15.	Maud's Landing	Near Point Cloates	1909	2,359	654,000
16.	Gladstone	Hamelin Pool	1909	523	2,000,000
17.	Davis & Hankinson No. 1.	Warroonga Sta.	....	1,280	?
18.	Davis & Hankinson No. 2.	Warroonga Sta.	....	1,180	500,000
19.	R. F. Sholl No. 1.	Marrow Sta.	....	1,500	?
20.	Minilya Sta. No. 3.	Combabado	1910	1,659	1,000,000
21.	Matheson's No. 1.	Cardabia Ck.	....	2,161	?
22.	Bunbury's	Winning Pool	....	2,650	?
23.	Bunbury's	Mia Mia Station	....	2,700?	1,000,000?

*In gallons of water a day when allowed to flow uncontrolled.

3 Year Old Company Has 300% Gain in Business

WATERLOO, IA., Oct. 30.—Continued growth in business of the Waterloo Oil Co., which was organized here in 1923, has resulted in the opening on Nov. 1 of its "Super Filling Station" at West 5th and Jefferson Sts. Headquarters of the company are at that address and the entire floor space covering about 25,000 square feet, has been remodeled into a filling station which is equipped to give oiling, greasing and washing service, and provide storage. Tires are also handled.

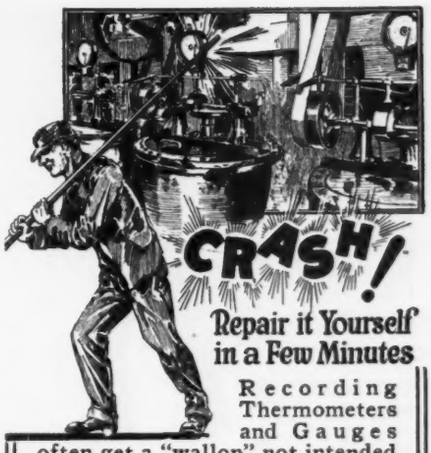
The company started out with one filling station. Later it built another one at the cost of $80,000 which also included garage and offices. A 300 per cent increase in business over the past three years, is reported this year by J. H. Hadley, one of the organizers of the company.

Members of the company, besides Mr. Hadley, are V. L. Brown and C. R. Hoff.

Energee gasoline and Tiolene motor oil, products of the Pure Oil Co., are handled.

New California Gasoline Plant

LOS ANGELES, Oct. 30.—The California Petroleum Corp. has completed a natural gasoline plant at Montebello, which has a daily capacity of about 2800 gallons of natural gasoline. The plant will operate on the gas from the California Petroleum and McGinley Oil Co. properties, with about 2,000,000 cubic feet daily available for treatment.



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CORRECT MEASURE PUMPS

World's Production in 1926 will Total Little More than in 1925

By Valentin R. Garfias
Manager, Foreign Oil Dept., Henry L. Doherty & Co.

Following his custom of the past three or four years, Mr. Garfias has made public his estimate of the world's production for the current year. In the past his estimates have been markedly close, considering the fact that he has had to forecast at least three months production in all countries and more than that in others.—Editor.

THE world's production of petroleum during 1926 is estimated at 1,071,000,000 barrels, showing practically no change from that of the previous year, and being but slightly larger than the average during the last four years, which is close to 1,042,000,000 barrels. The daily average during the year may be estimated at 2,940,000, of which the United States produced 2,080,000, and other countries 860,000 barrels.

The outstanding developments during the year have been the decline of the Mexican fields, the counterbalancing of this decline by the increase in the Venezuelan and Russian production, and the similar offsetting of probable minor declines in the outputs of the United States and Persia by the increases in Roumania and Colombia.

During the present year the United States, Mexico and Russia retain their relative positions as the three leading producers, while Venezuela outranked Persia for fourth place, Roumania passed Dutch East Indies for sixth, and Colombia moved from the 16th to 13th position. It further appears that should present conditions develop normally throughout 1927, it is not unlikely that the existing difference between the Russian and Mexican productions will be materially diminished by the end of the year and that the increased yield of Colombia will place this country in ninth position and ahead of India.

American Continents Share

THE United States and Mexico should produce in 1926 about 79%, and the aggregate of the seven leading countries should be close to 95% of the total. It is interesting to note that about 85% of the total comes from fields in the American continent, the United States accounting for about 71% and Spanish-American countries and Trinidad for 14%.

The production of countries other than the United States and Mexico has gradually increased during the last four years and now represents about 21% of the total.

The United States easily retains its long standing leadership with a total yield of 750,000,000 barrels, or an average daily yield of 2,080,000 barrels, representing slightly under 71% of the total, these figures being practically equal to those of the previous year. A decline of only some 6,000,000 barrels is indicated by some of the statistics so far available. It will be noted that the American production in the last four years has averaged about 741,000,000 barrels yearly and that this uniformity, as well as the marked increases of the previous years, have sharply reflected in the corresponding world's total yearly output.

Decrease in Stocks

THE crude and refined oils available in the United States in each year from 1920 to 1925 exceeded the demand. This resulted in the accumulation in storage of an additional surplus during the last six years, estimated at 340,000,000 barrels. The year 1926, however, shows a radically changed situation as there has been an excess of demand over supply, causing a reduction of the stocks estimated at 45,000,000 barrels against an increase in stocks of some 28,000,000 in the preceding year. This change has been interpreted by some to represent the long expected turning of the corner heralding a more stable situation and a brighter future for the American oil industry.

The Mexican production, which during 1926 will average daily close to 247,000 barrels, declined about 25,000,000 barrels or about 21% from the preceding year, against a decline for 1925 of about 17%.

Judging by the fragmentary information available regarding conditions in the Russian fields it is estimated that the production during the year will be close to 60,000,000 barrels, or about 170,000 barrels daily average, representing about 5.8% of the world's total production, and an increase of about 10,000,000 barrels over the previous year.

The production of the Venezuelan fields increased from 19,000,000 to 35,000,000, the country's yield averaging about 96,000 barrels daily, which is equivalent to 3¼% of the world's total, and as a result Venezuela should outrank Persia for fourth position.

The production of Persia probably declined somewhat during 1926 due in part to the exhaustion or closing of some of the large flowing wells, the total being estimated at 30,000,000 barrels, a daily average of close to 825,000 barrels, or a total decline of about 5,000,000 from the previous year.

Roumania Increases

THE Roumanian fields should reach a new high of 24,000,000 or about 66,000 barrels daily average, and it is remarkable that this region, which has been producing for about seventy years, is now at its producing maximum. The country produces over 2% of the world's output.

The fields of Dutch East Indies continue to show a slow gradual gain, the total being estimated at 22,000,000 barrels, or close to 60,000 barrels daily.

After thirty years of producing life the Peruvian fields should reach a new peak in 1926, estimated at 11,500,000 barrels. The country is producing 1.8% of the world's total or about 31,600 barrels daily average.

The fields of India, Argentina, Trinidad and Poland, remained practically stationary, there being but a slight upward tendency in the yield of the first two.

Perhaps the most interesting event in the year was the entry of Colombia into the world's market by the finishing of a pipe line, about 328 miles in length, connecting the Infantas field in the Magdalena Valley with the harbor of Cartagena. The line was put into operation on July 1st. The first tank-steamer, the "T. J. Williams," left Cartagena on July 4 loaded with 87,500 barrels of crude oil, the second tanker was loaded on the 10th and two more on July 15. With this outlet to seaboard the Madgalena Valley fields of Colombia can now be exploited economically, and as a result it is likely that the country's yield will be practically doubled during 1927, thus raising Colombia from the 13th to the 9th position in ranking as an oil producer.

There are no important changes to report in the remaining countries listed in the following table which shows the production of the various countries during the last three years, in the order of their importance in 1926. The figures for 1924 are those of the United States Geological Survey, for 1925 the estimates are those of the United States Bureau

of Mines, while those for 1926 are the author's own estimates:

World's Production of Petroleum

(In Thousands of Barrels)

	1924	1925	1926
United States ..	713,940	763,743	757,000
Mexico	139,497	115,515	90,000
Russia	45,312	52,448	62,000
Venezuela	8,754	19,687	35,000
Persia	32,373	35,038	30,000
Roumania	13,303	16,646	24,000
Dutch East Indies	20,473	21,422	22,000
Peru	7,812	9,164	11,500
India	8,150	8,000	8,000
Argentina	4,669	5,818	6,000
Trinidad	4,057	4,654	6,000
Poland	5,657	5,960	5,950
Colombia	445	581	5,000
Sarawak	4,163	4,257	4,300
Japan	1,959	2,000	1,820
Egypt	1,122	1,226	1,300
France	426	459	470
Germany	406	411	420
Canada	164	318	350
Czecho-Slovakia .	75	50	50
Italy	45	45	45
Algera	12	12	12
Cuba	4	4	4
Others	109	108	109
	1,012,927	1,067,566	1,071,330

Summarizing the foregoing it may be stated that the estimates for 1926 again emphasize the controlling importance in the oil industry of the fields in the American Continent, particularly those in the United States and Mexico, the figures showing further the sharp decline in Mexico and the increase in the yield of Venezuela, Colombia, Peru and Trinidad. The situation in the European and Asiatic fields, outside of the increase in Roumanian production, which is significantly important, is somewhat indefinitely reflected owing to the uncertainties encountered in trying to ascertain whether the production of the Russian fields can be materially increased and to the lack of accurate information regarding the actual reasons for the apparent decline in the Persian fields. The decline in American oil stocks, for the first time in seven years, is perhaps the most significant single happening during the year.

A birds-eye view of the world's oil industry at this time further shows the necessity for the United States, as the largest oil consumer, to conserve its present supply and to insure its future supply, within and without its territory. In this connection the recent report of the Federal Oil Conservation Board, appointed by President Coolidge, is worthy of serious consideration.

Calpet Man on Merger Board

LOS ANGELES, Oct. 30—L. J. King, vice-president, Associated Oil Co., headquarters at Los Angeles, has been selected as one of the directors of the California-Eastern Oil Corp., the new organization that is absorbing Julian Petroleum Corp., Marine Corp., and the Superior Oil Co.

LOS ANGELES—Frank Hogan, New York, chief counsel for E. L. Doheny, who handles the Naval Reserve case in which the U. S. government is attempting to recover the property from the Pan-American, conferred in Los Angeles with Mr. Doheny.

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Our Industry—A Page of Facts and Observations

National Petroleum News

By Paul Wagner

SOVIET RUSSIA draws its oil drilling machinery from America in direct proportion to development needs. The czar's government likewise obtained its equipment in this country prior to the time when world strife brought about the leveling of the Slavonic monarchy. American ingenuity built up this demand, for rotary drilling equipment was introduced in the Baku and Grozny fields almost from the beginning of their important oil yields. This demand will continue, for American supremacy is recognized in the development of production methods and the building of necessary equipment.

* * *

A PARTY of Russian oil men, composed of officials of the Grozny Oil Trust, "Groznepht," are now touring the oil fields of the United States to study field equipment and production methods. Included are S. M. Gatchin, vice president of the Grozny Oil Trust; N. I. Rodnensky, technical director; S. A. Vyshetravsky, petroleum engineer; and S. Rosoff, representative of the Amtorg Trading Corp., the last mentioned with headquarters at New York. The Amtorg Trading Corp. is the only organization through which all Russian Trusts and industries trade with the United States.

* * *

AFTER completing their tour of the United States, the representatives of the Grozny Oil Trust, one of the three petroleum arms of the Soviet controlled industries of Russia, will place in the hands of the Amtorg Corp., at New York, the various buying orders decided upon. They will sail for home about Nov. 13, it was disclosed at the time of their recent visit to Houston, secure in the assurance they have had available to them the best equipment and methods the oil industry provides.

* * *

THE petroleum industry needs to get one major pool behind in its production, observed J. H. Jenkins, vice president of the Tidal Oil Co., Fort Worth, at luncheon the other day. Most of the time in the last two or three years the industry has been about one pool ahead of its current requirements, or, at least dangerously near the dividing line. In 1923, the industry was several pools ahead. With a backlog of settled production from old fields constantly mounting and increased recoveries of products resulting from better refinery practice there appears not to be the need currently for more new fields than will be required to offset declines in flush yields. Of course, there must be no cessation in providing an adequate supply of crude, but either the withdrawal of oil from storage or a lapse of time in the development of new fields would help the industry materially in solving its problems.

* * *

TAXES levied against petroleum products concern the producer no less than they do the refiner and the marketer, in the opinion of J. D. Collett, president of the Texas division of the Mid-Continent Oil & Gas Association. It is by no means impossible, he believes, that a synthetic motor fuel may be developed that will serve the purpose of gasoline but which will not be taxable under existing laws because it is not gasoline. Such a product sold without tax in competition with gasoline would not only demoralize refining and distribution of petroleum products but would react proportionately upon the oil producing industry as well. That phase of the tax question, he rightly holds, calls for serious consideration over and above all other objections.

* * *

THE human element is the hardest thing a purchasing agent has to deal with, according to E. R. (Dad) Folmar of the Magnolia Petroleum Co., at Dallas. In business, as in personal life, he says, you form deeper attachments for certain people than for others, and you cannot tell why; but it is the business of the purchasing agent to juggle his personal feelings and not let personal prejudice enter into his business with salesmen.... The purchaser has to be controlled by his head, not by his heart.

* * *

IF there is any one thing a purchasing agent ought to know how to do from holding his job, says Mr. Folmar, it is that of sizing up a man as to whether he is a liar for his firm, a liar for himself, or simply a blowhard. When a purchasing agent possesses this ability in abundance, the Magnolia's buying chief asserts, the handling of all sorts of situations with all sorts of personalities is made easy.

* * *

PRICE is not always the decisive factor in placing an order, says Mr. Newberry, but the buyer should not allow bartering for low figures to be added to his other problems. After bids are received and prices tabulated several things are to be considered in connection with competitive prices before deciding where an order is to be placed. First in importance, Mr. Newberry regards as service, although time of delivery sometimes takes paramount place in a decision. Then, there is the matter of quality, but that he considers largely a question of preference, because "a company producing a poor product would not be asked for bids." The foregoing taken into account, Mr. Newberry then gives consideration to the price factor.

* * *

STANDARD OIL CO. of California has a way of keeping touch with its employees, remotely located as they may be from headquarters offices, recognizing their joys and sorrows with a "corporate nod," or "smile," as it were. One way of doing this is through its "inside" house organ called "Among Ourselves," issued monthly from San Francisco. If you are a Standard employee didn't your heart grow full, or if you're not connected with the California corporation doesn't your heart react that way to read this little tribute:

"Rounding out a 50-year stretch of pipelining with Standard Oil Co. of California and other oil concerns, 25 of which were spent in the Kern River district, T. J. McGinnis, affectionately known as Uncle Tom, has discarded his working clothes and passed into the leisure class. Along with Uncle Tom there were also retired Aunt Mollie McGinnis and Foxy McGinnis (the terrier), the latter with 13 years of service. While neither of these have appeared on the company's payroll, they have been none the less active pipeliners, and Uncle Tom will have to cut up his pension check accordingly."

* * *

THE man you give the pleasant word to, even if it is just—"Sorry. Nothing in your line today. Glad you came in. Be back, we may need something later on,"—he is the man, "Dad" Folmar says, who will break his back giving you service when the time comes that you do need his product.

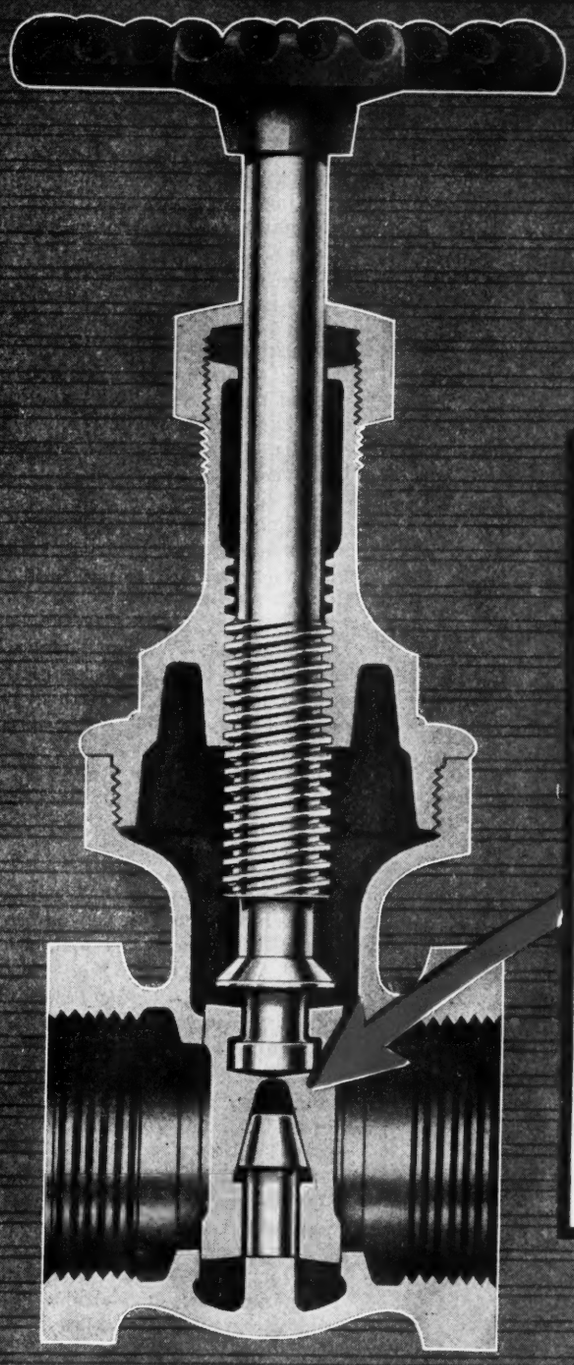
* * *

B. R. NEWBERRY, for seven years purchasing agent of the Lone Star Gas Co., Dallas, likes to place his business on open competition and insists on the price first. He doesn't like jockeying on prices, saying that "if you allow such a practice to start, in a very short time every price you get is high and you never know where or when you are getting good prices."

* * *

W. P. DYKEME, natural gas engineer, representing Barney Carter of Ranger, Texas, has been making an appraisal looking toward the installation of facilities for serving San Angelo with natural gas from northern Coleman county. Mr. Carter and his associates have already been granted a franchise to supply the town of Coleman and they have an option to purchase the San Angelo Gas Co's properties.

THIS SEATING METHOD REDUCES WEAR?



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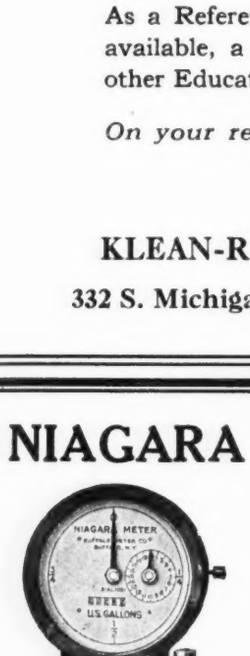

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New Oil Station Construction

Danvers, Mass.—The Quaker Gasoline & Oil Co., Inc., is installing 20,000 gallons storage capacity, according to M. E. Frye, treasurer. The company has just started in business and is now handling only oil, but expects to add gasoline to its line next spring, Mr. Frye states. C. S. Keene is president.

* * *

Tiffin, O. The Community Sales & Service Co., with headquarters here, is erecting pressed brick filling station and garage at Sycamore, O., handling Sinclair products distributed by The M. & S. Oil Sales, of Upper Sandusky, O.

* * *

Washington, D. C.—Lord Baltimore Filling Stations, Inc., which recently opened two modern filling stations here, now has under construction four additional stations which will be completed by Jan. 1.

* * *

Gallipolis, O.—C. R. Niday Oil Co., new oil jobber and marketer here, is building one bulk and three service stations, according to C. R. Niday, owner.

* * *

Grinnell, Ia.—William Kaloupek, owner of Home Oil Co., is completing bulk station at Gilman, Ia., which was expected to open about Nov. 1.

* * *

Joplin, Mo.—Bear State Oil Co. is building lubricating oil plant on West 4th St. here. George W. Foland is president.

* * *

Rector, Ark.—Two service stations are being erected here, one each by John W. Crockett and Luther Harper.

* * *

Ashtabula, O.—C. F. Tuttle, who recently opened a new service station here, is planning construction of others.

* * *

Fairbury, Neb.—Paul C. Kruss, of Reynolds, Neb., bought property for garage and service station.

* * *

De Smet, S. D.—R. L. Folsom, of Pierpont, S. D., bought property for filling station.

* * *

San Antonio, Tex.—Kahn Oil Co. is building three service stations here.

* * *

McAllen, Tex.—Gulf Refining Co. bought property for filling station.

* * *

Canton, Okla.—Bain's Garage is adding drive-in filling station.

* * *

Portsmouth, O.—George Freund is building filling station.

* * *

Lakewood, N. J.—Property on state highway here has been purchased by Acme

Auto Supply Co., Inc., where the company plans to install a railroad siding for bulk storage and service station, according to Morris Koffman, secretary and treasurer.

* * *

St. Jacob, Ill.—Merchants Oil Co., of Highland, Ill., is erecting filling station here, according to J. G. Bardill, secretary and treasurer.

* * *

Trenton, N. J.—Standard Oil Co. of New Jersey is completing two service stations and has begun construction of two more here.

* * *

Fort Dodge, Ia.—The Paramount Oil Co. is building service station here, according to H. G. Kortright, vice president.

* * *

Minnewaukan, N. D.—T. H. Woldy, of Edmere, N. D., is seeking permit for filling station on the N. P. right-of-way.

* * *

Fremont, Ia.—Maurice Proffitt building filling station, to handle Standard Oil Co. of Indiana products exclusively.

* * *

Hancock, Mich.—H. S. Lips, general agent for the Lightning Battery Service, will erect filling station.

* * *

Trenton, N. J.—Two service stations are being built here by Gulf Refining Co., Pittsburgh, Pa.

* * *

Westpoint, Neb.—Jerome J. Brazda purchased two corner lots for filling station and garage.

* * *

Willmar, Minn.—Standard Oil Co. of Indiana gets permit for service station.

* * *

Boonville, Mo.—Standard Oil Co. of Indiana erecting $7,500 filling station.

* * *

Kansas City, Mo.—Standard Oil Co. of Indiana will erect filling station.

* * *

Dunkirk, O.—F. E. Sampson purchased property for filling station.

* * *

Chappell, Neb.—Leslie Bros. Auto Supply Co. building filling station.

* * *

Milan, Mo.—Standard Oil Co. of Indiana to build filling station here.

* * *

Crystal City, Tex.—H. O. Price to build garage and filling station.

* * *

Haven, Kans.—Standard Oil Co. of Indiana to build filling station.

* * *

Hoxie, Ark.—J. E. Ring purchased property for filling station.

* * *

Bloomfield, Neb.—J. B. Gossard is building service station here.

* * *

Robbinsdale, Minn.—William Sipe Co. building service station here.

* * *

Omaha, Neb.—Sinclair Refining Co. to build filling station.

* * *

Fremont, Neb.—Lewis Oil Co. to build service station.

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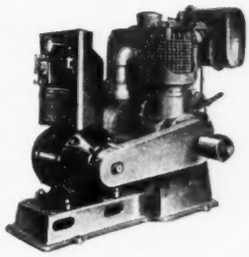

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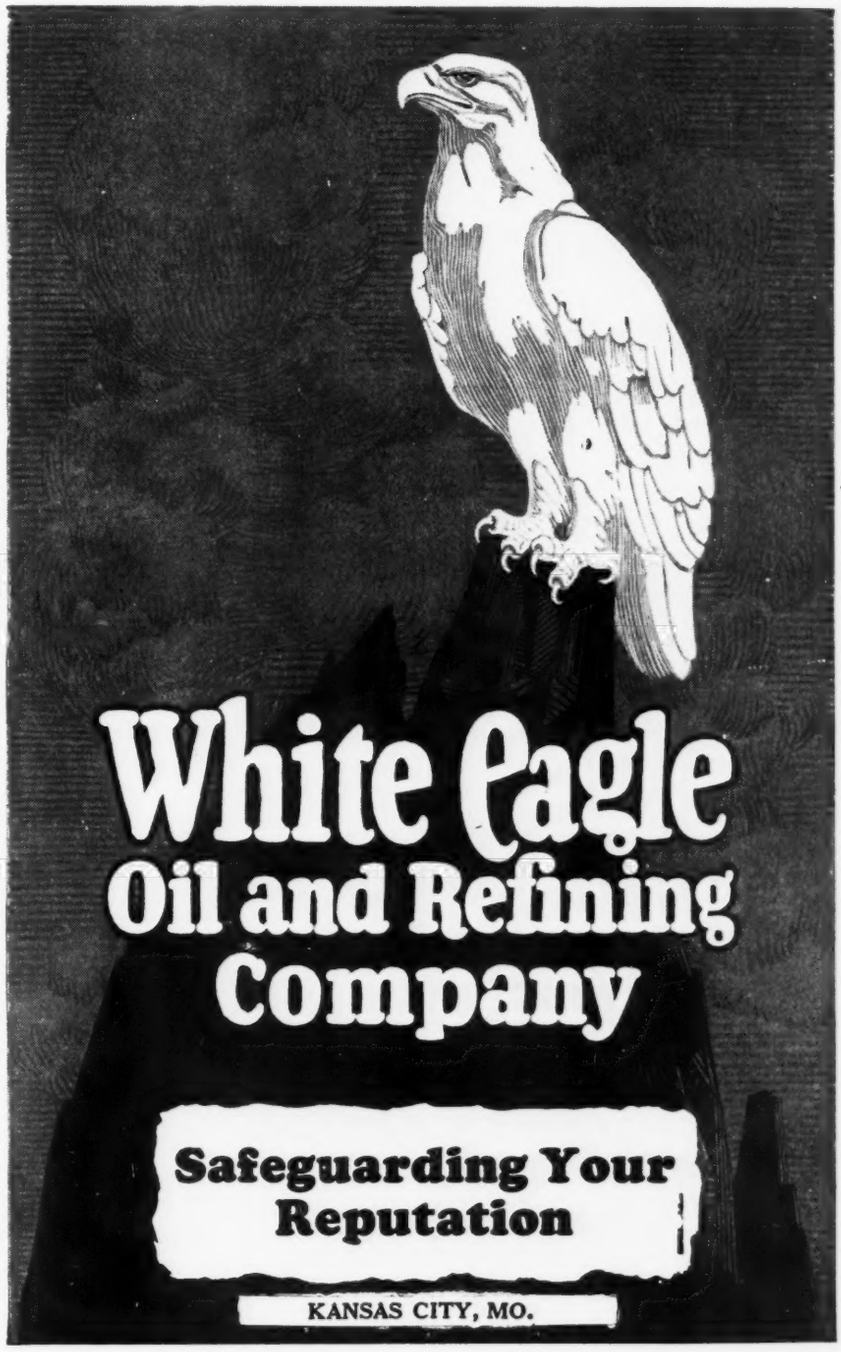

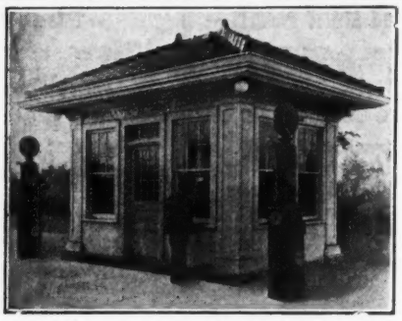

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New Deep Sand Found At Spindletop

Staff Special—By Telegraph

HOUSTON, Oct. 29.—Yount-Lee Oil Co.'s No. 9 Fee well on the southwest flank of Spindletop salt dome is showing oil in 35 feet of sand at a total depth of 5005 feet. Should it make a commercial producer a new deep pay offside the dome will have been opened.

The well does not extend the area of production. Earlier wells were completed at depths ranging from 2850 to 3250 feet except that recently the Gulf Production Co. got a well on its Weed tract producing from approximately the 4300-foot level. It was not known whether the Gulf well represented a new pay or the slant of the sand horizon away from the salt plug. Now the No. 3 McFaddin test of the Yount-Lee company is making upward of 4000 barrels at about 4100 feet total depth. Its proximity to other wells producing at shallower levels along the H. & T. C. right of way indicates the proving of an important pay at levels immediately below 4000 feet.

Spindletop daily average production after slumps to as low as 78,000 barrels is now back up to 85,000 barrels with prospects of being maintained close to that level for some time to come.

Nebraska Oil Jobbers Hold Meeting

LINCOLN, NEB., Oct. 30.—The first convention to take place in the new Hotel Norfolk at Norfolk, Neb., was the one just held by Nebraska oil jobbers. About 150 attended the district meeting and about 100 sat down at the banquet, according to the bulletin of the Nebraska Independent Oil Men's Association.

Speakers at the meeting were: George Coryell, Coryell Oil Co., Lincoln, president of the association; C. M. Sutherland, secretary of the association; Dr. T. W. Bass, chief of the tax collection bureau; F. J. Silsbee, National Petroleum Marketers Association, Chicago; and Jack Nourse, Kansas City.

The musical program at the banquet was in charge of F. G. Humphrey of the Norfolk Chamber of Commerce. C. W. Stewart of the chamber of commerce delivered the address of welcome, and Hugh J. Boyle, attorney, delivered an after dinner speech on "Marketing Independently."

Producer in Ector County, Texas

Staff Special—By Telegraph

HOUSTON, Nov. 1.—J. S. Cosden et al's A-1 Connell, in Sec. 13, Block B-16, Ector county, is west Texas' latest contribution to new oil territory. At 3495 feet it made a 90-barrel head Sunday while trying to swab. There were 2600 feet of 33.5 gravity oil in the hole

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Through Oil Rates on Lower Level Sough To Southeastern States

By J. C. Chatfield
N. P. N. Staff Writer

TULSA, Nov. 1.

THROUGH rates to southeastern states from both Oklahoma and north Texas were proposed by the Transcontinental Oil Co. at the Tulsa hearings of the general oil rate investigation which adjourned here today. The next hearing in the series will be held at Atlanta beginning Nov. 17.

Proposed through, one-factor rates asked by the Transcontinental are on a much lower level than those now in effect. To some of the most distant points such as in the southern end of Florida reductions of 50 per cent and more were asked.

The attack of the Transcontinental on rates to the southeast is not the first made by that company. It has been conducting a campaign on rates to that area for about four years.

In 1922 the Transcontinental filed a complaint attacking rates to Gastonia, N. C., for the Piedmont Oil Co., one of its tank car customers. Only oil rates from Fort Worth to Gastonia were brought into that proceeding.

I. C. C. Refuses Reparation

THE Interstate Commerce Commission examiner who heard the case, recommended a reduction in the rate and an award of reparation. The commission refused to grant a reparation or to cut the rate, however, indicating in its decision that it would not be proper to cause a general reduction in southern rates on the basis of a single complaint attacking one specific rate.

Accepting the challenge of the commission in its decision in the Piedmont case the Transcontinental filed its present complaint which is docketed as No. 18061 and consolidated with the general investigation. At the same time the company obtained a reopening of the original Piedmont case and filed a second complaint asking additional reparations on behalf of the Piedmont Oil Co. No new evidence will be submitted in the original Piedmont case. It will be decided in connection with the present general investigation but on the original record.

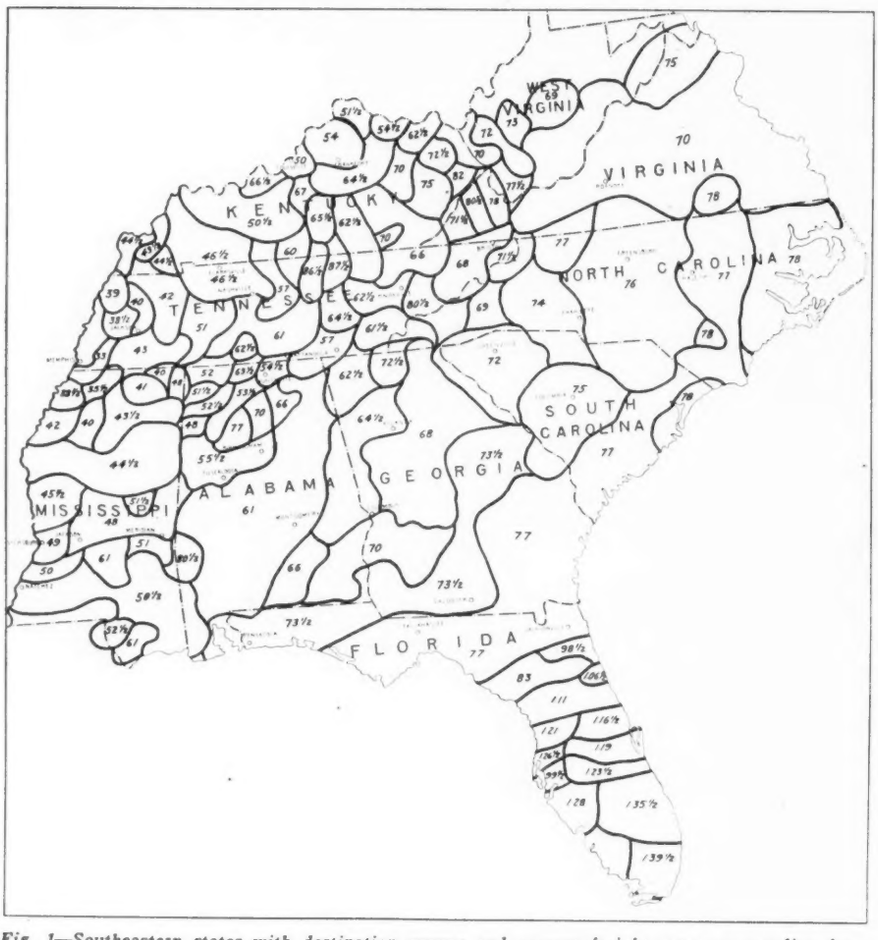


Fig. 1—Southeastern states with destination groups and present freight rates on gasoline from Oklahoma (Group 3) in cents per hundred pounds. These rates are being attacked by the Transcontinental Oil Co. in the general rate investigation.

Competition Difficult

ALL rail rates in the southeaste states have been on a high level the past. While that section of t country has been developing rapidly recent years and its consumption of p troleum products and other manufa tured goods has been on an upgrade, r rates have been increased rather th reduced. Rates originally were plac on a high level because tonnage was light that large ton mile earnings we needed to overbalance the lack of tra fic density.

Since the increase in the consumpti of petroleum products in the states sou of the Ohio and Potomac rivers a east of the Mississippi has not been m by a reduction in rail rates, the indust has been making increasing use of combination of pipe line, water and r transportation to move goods to co sumers there.

W. W. Klingensmith, traffic manag for the Transcontinental, presented e dence at the hearing showing a treme dous increase in receipts of petroleu products at South Atlantic and Ea Gulf ports for distribution in the sout east. He showed that receipts at the ports of light oils were nearly tripl in 1924 as compared with 1921, and th receipts of heavy oils were near doubled.

According to records of the Chief Engineers, U. S. Army, light oil receip at southeastern ports from other U. ports totaled 249,184,000 gallons in 192 In 1922 the total increased 28.47 pe cent to 320,140,000 gallons; in 1923 increase of 60.73 per cent over 1922 514,576,000 gallons, and in 1924 an i crease of 36.32 percent over 1923, r ceipts totaling 701,504,000 gallons. D tailed figures showing receipts of coas wise oils at ports, such as Mobile, Al Pensacola, and Jacksonville, Fla., Brun wick and Savannah, Ga., Charlesto S. C., Wilmington, N. C., and Norfo Va., are given in the accompanyi table prepared by Mr. Klingensmith.

Coastwise Trade Grows

AS a compliment to his statem showing receipts of oils at sout eastern ports, Mr. Klingensmith ga figures showing coastwise shipments petroleum products from Texas G ports, showing the great increase in th business enjoyed by coast refiner Light oil shipments to the coastw trade from these ports increased fr

660,832,000 gallons in 1921 to 1,297,967,000 gallons in 1924, and heavy oil coastwise shipments jumped from 1,653,712,000 to 2,907,567,000 gallons in the same period.

To show the reason for this condition Mr. Klingensmith compared transportation costs of Oklahoma and South Texas refiners to a large number of southeastern destinations. He showed that the cost of Gulf refiners on a combination rail, pipe line and tanker haul to Birmingham, Ala., is 49.14 cents per hundred pounds while Oklahoma refiners must figure on a rail cost of 55.5 cents. To Atlanta Ga., Oklahoma refiners have a transportation cost of 64.5 cents per hundred and Gulf refiners a cost of 56.64 cents. To Columbia, S. C., Oklahoma refiners have an all rail transportation rate of 75 cents per hundred and Gulf refiners a cost of 69.14 cents.

A map was put in evidence showing the territory to which Oklahoma refiners have the advantage over Gulf coast plants and the territory to which Oklahoma refiners are at a disadvantage. The map showed Gulf coast plants able to take their oil from Oklahoma by pipe line to the Gulf, ship it by tanker to southeastern terminals and thence inland by rail at an advantage over the all rail haul from Oklahoma to all the states of West Virginia, Virginia, North and South Carolina, Georgia and Florida. Oklahoma refiners have somewhat lower costs to the northern half of Mississippi, a small section in the northwestern part of Alabama, most of Tennessee and Kentucky.

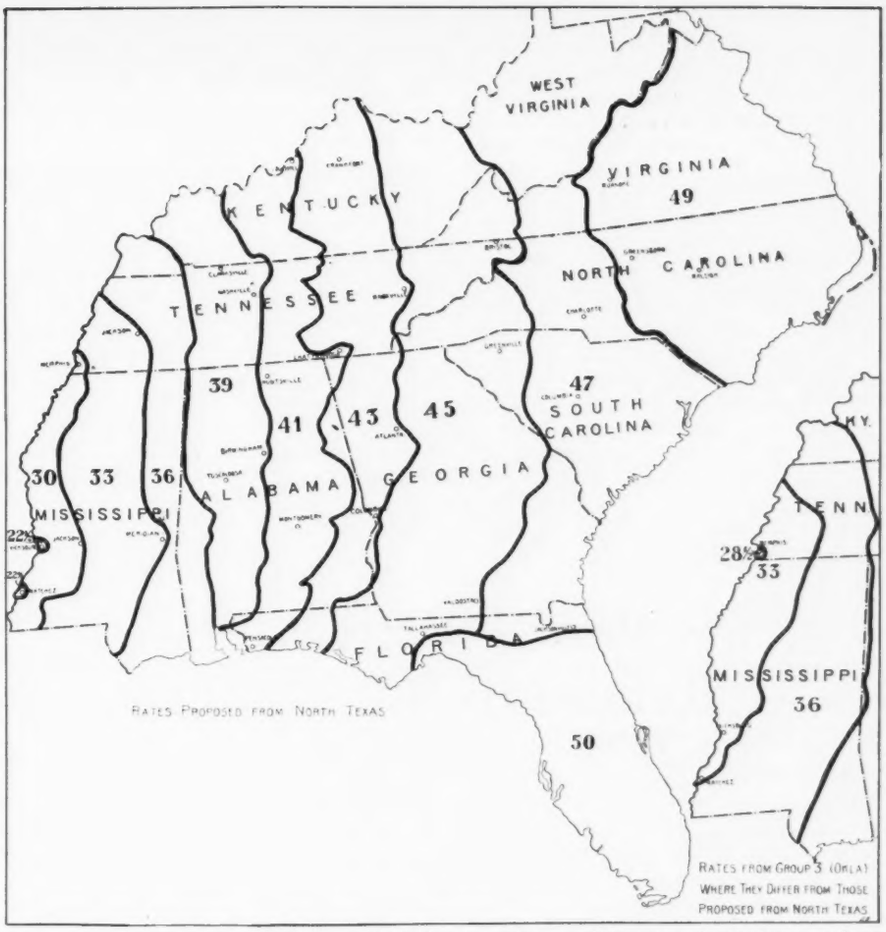


Fig. 2—Southeastern states with proposed destination groups on shipments of petroleum products from north Texas and Oklahoma (Group 3) and proposed through rates on light oils in cents per hundred pounds. Large map shows rates proposed by the Transcontinental from north Texas. The small inset map of western Tennessee, Kentucky, and Mississippi shows proposed rates from Group 3. To the entire remainder of the area the proposed rates are the same as from north Texas.

Shipments Falling

A. G. BRIGGS, assistant traffic manager for the Transcontinental company, gave the examiner for the commission a statement of shipments of petroleum products from its refineries at Fort Worth, Boynton and Bristow for the past four and a half years as evidence that the growing movement of petroleum by water has kept inland refiners from shipping into the southeast. In 1922 the company shipped 29.4 per cent of its production to that area. In 1923 it was able to move only 15.5 per cent, in 1924, 17.1 per cent, in 1925, 17.1 per cent and in the first half of 1926 only 10.9 per cent.

One of the reasons for the last big fall in shipments to the southeast—10.9 per cent for the first half of 1926—was an increase in rates in 1925 put in by the carriers to avoid fourth section violations. There were a large number of points in the southeast which had rates higher than those in effect to points beyond. To correct this violation of the law the carriers raised many rates and lowered a few.

At the time these changes were made it was announced by the carriers that the level of rates would be lowered as a result. Calculations made by Mr. Briggs and presented to the commission showed that rates were lowered from New Orleans but increased from Fort Worth.

Based on the population of the destination areas to which rate adjustments were made Mr. Briggs showed there were increases representing 64.7 per cent of the total adjustment from Fort Worth and decreases representing 35.3 per cent of the total. In the case of the changes from New Orleans to the same area the percentage increase of the total adjustment was only 7.6 per cent and the percentage decrease 92.4 per cent of the total.

Rate Comparisons

THE Transcontinental does not allege discrimination in its case but relies upon its showing that the rates are unreasonable charges in themselves. Mr. Briggs pointed out a large number of cases with comparative mileages and rates to support this contention. From New Orleans to Albany, N. Y., a distance of 1514 miles the oil rate is 53.5 cents per hundred, while from Oklahoma to Elizabeth City, N. C., 1491 miles, the rate is 78 cents. The distance from Oklahoma is 23 miles less and the rate 24.5 cents more. From north Texas to Scottsboro, Ala., 755 miles, the rate is 53.5 cents per hundred, the same as from New Orleans to Albany although the distance is only half as long.

From New Orleans to Detroit, a distance of 1020 miles the rate is 45.5 cents while the rate from Oklahoma to Belzoni, Miss., a distance of 563 miles is the same figure and from north Texas to Mendenhall, Miss., 501 miles, the rate is 49.5 cents, 4 cents greater than for a haul less than half as great as that from New Orleans to Detroit. The above illustrations are only a few of the many pointed out by Mr. Briggs to show the high rates in the Southeast.

Fig. 1 is a map of the southeastern states marked off to show present destination groups in that area with rates now in effect from Oklahoma (Group 3). Fig. 2 is a map of the same area showing the proposed destination groups with rates from north Texas and Oklahoma.

At present the rates from Oklahoma range from 33 cents per hundred just beyond Memphis to 75 cents in the northeastern section of Virginia, 78 cents to the eastern edge of North and South Carolina, 77 cents to the south-

Years	LIGHT OILS No. Cars	Gallons	% Inc.	HEAVY OILS No. Cars	Gallons	% Inc.
1921	31,245	249,184,000		43,744	349,952,000	
1922	40,065	320,140,000	28.47	53,913	431,304,000	23.24
1923	64,363	514,576,000	60.73	81,426	651,408,000	51.03
1924	87,688	701,504,000	36.32	79,748	639,584,000	Dec. 1.82

eastern part of Georgia and $1.395 to the southern end of Florida.

After the Mississippi river is crossed rates increase every few miles as the haul lengthens. For example in Tennessee alone the rate steps from 28½ cents at Memphis to 33 cents, 38½ cents, 40 cents, 43 cents, 51 cents, 57 cents, 61 cents, 64½ cents, to 80½ cents just east of Knoxville.

Proposed Rates

UNDER the Transcontinental proposal there would be seven rate groups in Tennessee ranging from 28½ cents as at present at Memphis to a high of 45 cents from Oklahoma and from a low of 30 cents from north Texas to a high of 45 cents. In Virginia the company proposes three groups, 45 cents, 47 cents and 49 cents. In North Carolina the same groupings and in South Carolina two groups with rates of 45 and 47 cents. To Florida the company proposes a rate of 41 cents at Pensacola, 45 cents at Talahassee, 47 cents at Jacksonville and a maximum of 50 cents to the peninsula.

Following presentation of the Transcontinental case by Willis Crane, assistant counsel for the National Petroleum Association, with the two witnesses mentioned above, the Mid-Continent Refiners Traffic Association completed its case on rates to the northeast.

C. L. Seideman, traffic manager for the Imperial and Kettle Creek Refining Cos., presented an exhibit asking for lower rates from El Dorado, Ark., to the southeast, as did J. W. Liddell, traffic manager for the Continental Oil Co. of Texas, seeking better rates from Wichita Falls to the southeast.

Rehearing May Bring Large Refund In Rate Cases

WASHINGTON, Nov. 1.

THE lid of a Pandora's box, set on the door step of the Interstate Commerce Commission by the oil industry, involving a loss to the railroads and a gain for the industry running somewhere between $8,000,000 and $20,000,000, was lifted a little by the commission today. It announced that in two cases, Indian Refining Co. Inc. vs. Louisville & Nashville et al., and National Refining Co. et al. vs. Atchison, Topeka & Santa Fe et al. it would hear re-argument as to alleged violations by the railroads of Sec. 6 of the interstate commerce act. That section requires the railroads to publish and observe their rates.

The two cases have been decided against the oil company complainants. They are like two cases brought by the Standard Oil Co. of Indiana which are much better known. The fact that the commission has decided to hear arguments on the law phase of the subject in the two relatively unknown cases is taken to mean it will do likewise with the much better known Standard cases. The Standard cases are the ones that created a furore among traffic men, both shipper and railroad, because it was alleged they involved from $8,000,000 to $12,000,000.

Now it appears that the traffic managers and attorneys for oil companies who brought these cases, did much more than was thought. The estimate now runs to $20,000,000. The cases may cause division in the oil industry. Some oil companies sell on the basis that if there is a refund in railroad charges the buyer shall have the benefit of the refund. They have settled with their customers.

A MAN, formerly employed in the commission, discovered that the railroads had violated their tariffs, and, under the dozens of decisions made by the commission and the United States Supreme Court, they owed oil companies millions of refunds. Contracts were made for prosecution of refund cases on a contingent fee basis. If oil companies have made sales contracts to refund and contracts to pay lawyers out of refunds that may be made, some companies will be in trouble about the matter if the commission orders refunds. Companies having such contracts are said to be opposed to refunds.

Because the commission is loath to give the oil companies anything that body seems to be trying to eat crow on all the cases of that sort it has ever decided. Taking $20,000,000 away from the railroads would be a serious blow, although it might help some of the oil companies that were knocked breathless by the terrific deflation that took place in 1921.

It is hard to get an accurate estimate as to the amount involved. Attorneys for the National Refining Co., in their petition for further hearing, said their claim called for refund of $132,000. That company has other cases in which it is unofficially estimated the amount involved $4,000,000, the refund being about $100 on each of 40,000 cars.

The whole thing is extremely complicated and technical, even to the technical men of the railroads, the industry and the rate regulating body.

Edgar E. Clark, former chairman of commission and Wilbur LaRoe, Jr., former chief examiner of that body, have been retained by the Standard of Indiana to fight the cases for it.

Standard Suits Dismissed

ABOUT the middle of July a division of the commission dismissed the two Standard complaints, holding that the rates that were assessed were legally applicable on shipments from the Oklahoma, Kansas, Missouri, Illinois and Wyoming refineries of that company. The Standard alleged the rates were illegal and that overcharges were made on about 2500 tank cars.

From that decision by a division the Standard has taken an appeal to the whole commission. In support of that appeal Clark and LaRoe filed a brief pointing out that in dismissing the two cases the regulating body reversed dozens of its own decisions and a handful of decisions by the Supreme Court.

To traffic men a declaration of that kind signed by the former chairman of the commission is more than ordinarily significant for this reason: Edgar E. Clark wrote the rules the railroads are supposed to follow in publishing their rates. For years he had personal charge of all cases arising under tariffs that, because of the failure of the railroads to hedge about their rates, left the shippers free to send their traffic around Robin Hood's barn.

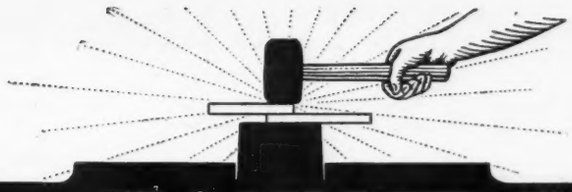
Out of the war confusion, in which the late Clifford Thorne's 4.5 cents per 100 pounds commutation of the McAdoo 25 per cent increase in freight rates was a heavy contributing factor, the railroads emerged with tariffs more complicated than any ever imagined by the humorists who have laid down what they called "rules" for interpreting freight tariffs.

Routes Not Specified

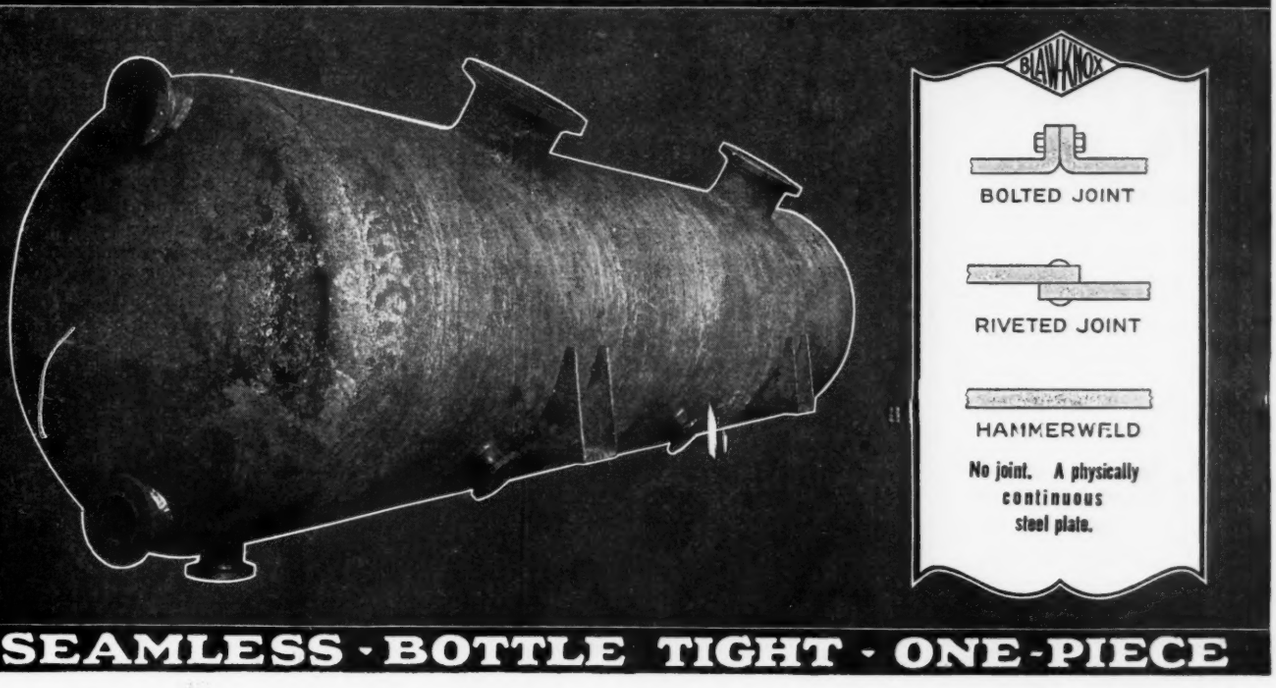
THE oil companies routed, it is estimated, more than 250,000 carloads of petroleum products under those tariffs in the four years 1921 to 1924, inclusive. They noted that the railroads, in publishing a rate of 20.5 cents from Wood River to Chicago, for instance, made no specific restrictions as to the routes shippers should use. Therefore some shipments to points around Chicago were routed via Cleveland, O., and as far east as Pittsburgh. They claimed the benefit of an intermediate point rule. That rule says that when there is no specific rate to a given point published, the rate to be applied shall be the one published to the next more distant point. Under that rule it was claimed that the point near Chicago was intermediate over a route from Wood River to Chicago via a route through Cleveland or Pittsburgh.

Then, under such a construction, all points over that route, in Ohio, Indiana and Illinois, were entitled to take a rate less than the 20.5 cent rate over the shortest direct routes between Wood River and Chicago. There were no routing restrictions in the tariffs and the shippers exercised their legal right to route their traffic in such a way as to obtain the lowest possible rate.

While Mr. Clark was chairman, the regulating body was strict in holding the carriers to protecting the low rates that could be figured out in the way indicated. They were made to refund almost without exception. The shippers in the North did not pay a great deal of attention to the "open routes" possible in the rather carelessly drawn tariffs under which they shipped.



FORGE *and* HAMMER WELDING



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S. O. New Jersey Adds Two More To Marketing Committee

C. O. SCHOLDER
Vice President of the Standard Oil Co. of Lousiana

NEW YORK, Nov. 1.—Increasing the number of its marketing committee members from four to six, the Standard Oil Co. of New Jersey on July 1 appointed C. O. Scholder, vice president of the Standard Oil Co. of Louisiana, and C. G. Sheffield, manager of the fuel oil department of the New Jersey company, as the two new members. Both Mr. Scholder and Mr. Sheffield, who are veteran marketing men with the Standard, will act as joint managers of the domestic sales department with E. G. Barber, J. A. Van Wynen, E. A. Holbein and A. Clarke Bedford.

Mr. Scholder continues as vice presient in charge of sales for the Louisiana company at New Orleans, while Mr. Sheffield's activities are extended to include sales of lubricating and specialty products in the domestic field.

Circuit traveler in the mountainous regions of Tennessee and Kentucky was the title under which Mr. Scholder began his work with the Standard of Louisiana 35 years ago. Besides selling kerosene and gasoline, he had the additional duty of checking up stocks in barrel warehouses which were about the only kind of bulk stations at that time.

Within a few years, Mr. Scholder was promoted to sub-agent in Tennessee with headquarters at Chattanooga. In 1899 he became special agent at Memphis with supervision over northern Mississippi and Alabama, as well as Tennessee. In 1914, after 23 years of service, he was appointed to the board of directors, retaining his position at Memphis until April, 1917 when he became general sales manager at New Orleans. He was elected vice president on Jan. 29, 1920.

About 25 years ago, Mr. Sheffield entered the oil business, getting his first training with the Union Oil Co. of California, as lubricating oil salesman. After a few years, he was selected to install and organize the company's tank wagon service in Washington and part of Oregon, which resulted in his appointment to assistant manager in the Seattle office.

Here he had to produce business with a tank wagon unit of his own making. He was later transferred to San Francisco as manager of the asphalt and fuel oil department and then became sales manager.

During the war Mr. Sheffield was in charge of the oil division of the fuel administration at Washington and later director of distribution of oil products. While performing these duties, he came to the attention of the Standard of New Jersey and in February, 1919, was apponted manager of the company's fuel oil department.

Car Gauging Practice To Be Studied

NEW YORK, Nov. 1.—The special committee on a uniform method of calibrating (gauging and strapping) tank cars, which was created at the Aug. 5 meeting of the American Petroleum Institute's general committee on railroad transportation at Chicago, is to be made up as follows, the institute recently announced.

Dr. R. P. Anderson, chairman, American Petroleum Institute, New York; J. D. Hess, Sinclair Refining Co., New York; A. E. Smith, Union Tank Car Co., Chicago; C. A. Porter, Indian Refining Co., Lawrenceville, Ill.; Thomas Beaghen, Jr., Mexican Petroleum Corp., New York; E. A. Kraft, Pure Oil Co., Chicago; Joseph W. Hays, Mid-Continent Petroleum Corp., Tulsa; O. D. Horne, Marland Refining Co., Ponca City, and F. W. Shay, Standard Oil Co. of New Jersey, Elizabeth, N. J.

In the resolution requesting the appointment of this committee it was said:

"The committee recommends that the American Petroleum Institute investigate the whole subject of tank car gauging and strapping with a view of standardizing upon some method; and, that the institute, through some appropriate committee, proceed at once to invite and receive suggestions and recommendations of tank car builders, refiners and other petroleum tank car owners and others interested who may have any information to offer upon the subject."

To Build Tourist Camp

COLDWATER, KAN., Nov. 1.—A tourist camp, which will be equipped with drive-in filling station, oil and wash racks, and many conveniences for the tourist, will be erected here by Joseph J. Darroch, proprietor of the Golden Rule Filling Station here.

Cottages, 10 by 12 feet, will be erected on the north side of the station grounds and parking space will be included at the side of each cottage. A large kitchen for conveniences for cooking, and baths and lavatories with hot and cold water, will also be installed.

In addition to Blue Ribbon gasoline and motor oil, a line of tourist supplies will be carried.

All buildings will be painted white with green roofs. Flowers and shrubs will be planted to beautify the grounds.

SAN ANTONIO, TEX.—A compounding plant has been completed here by the Kahn Oil Co., according to M. A. Kahn, president.

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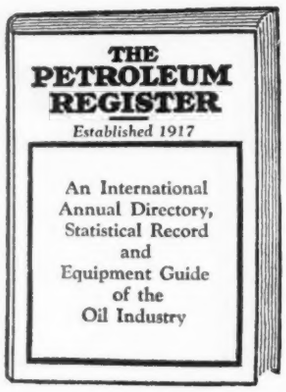

The Petroleum Register 1926

is now off the press, with hundreds of new listings. It combines in one book the following:

A comprehensive directory of equipment used in the oil business, with names and addresses of manufacturers and dealers—

Refiners — officers, capital stock, properties, summary of latest financial report—

Producers—thousands of companies engaged in producing and exploring for oil—

Marketers and jobbers—compounders, grease and natural gasoline manufacturers, pipe line companies, drilling contractors and foreign companies.

Two new features — an alphabetical directory of executives of leading oil companies and their positions. Reproductions of lease forms used by producers and prospectors.

Also Statistical Section; Refinery and Natural Gasoline Plants; Trade names of leading brands of petroleum products; Secretaries and headquarters of oil associations.

National Petroleum News
803 Caxton Bldg.
Cleveland, Ohio

Here is my check for $10 for the June 1926

PETROLEUM REGISTER

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Perhaps a Little Bit of Sentiment In This Lima Field Wildcat

By Lawrence E. Smith
N. P. N. Staff Writer

PROBABLY the most interesting test east of the Mississippi River today is that which the Ohio Oil Co. is preparing to drill in the Lima field of western Ohio. Location has been made two miles south of the village of Woodville, in Woodville township, Sandusky county.

We call it the most interesting because it will hold the interest of more people than any of the wildcats of Ohio or other eastern states. The test will be put down farther than any that have been drilled in the Trenton rock territory of Ohio. The Trenton is the oldest formation in the United States that yields oil in large quantity. The test probably will go 2000 to 2500 feet below the bottom of the Trenton.

Generally speaking, it is a real wildcat. The company took into account in making the location such geological data as it possessed which would apply to oil accumulation in the Trenton and hoped that some lower formation might be found which is governed by the same conditions.

Business is said to be seldom concerned with sentiment, but Mr. Donnell, president of the Ohio Oil Co., probably would be just a little bit more pleased at finding a new oil pay in this field than he would in some other district where the Ohio operates. The company got its start in western Ohio, it still maintains general offices in Findlay, although its production west of the Mississippi River is many times greater than it is east of that river.

* * *

"THERE is a tendency in modern days to run every new innovation to death, with the result that valuable processes become generally discredited until reintroduced with more discretion at a later date."

The comment quoted is that of A. Beeby Thompson, eminent British petroleum engineer, in the August number of the Journal of the Institution of Petroleum Technologists. He was discussing, when he made that observation, such matters as long stroke pumps, gas lifts, etc.

Long stroke pumps have generally passed through the innovation stage and their worth under different production conditions is fairly well known. Just now the gas lift is claiming much attention. It has proved of great value in California and in some parts of the Mid-Continent, but there are indications that Mr. Thompson's criticism may be well founded on this subject. Operators generally know that in using a gas lift, the rock pressure of the well where it is applied must be greater than the pressure of the gas that is put in; yet, one installation is said to have been made without consideration of this fact with the very obvious result that the gas put in went into the sand instead of lifing oil as it was intended to.

* * *

DRILLERS are not much given to writing, being a class that find expression in work rather than in words. One of them, however, is a fitting spokesman for all. He is Charles A. Whiteshot, who in 1905 issued a thick volume titled, "The Oil Well Driller." It was largely historical, though, and not so colorful as it should have been, considering the author's qualifications of experience and readable literary style.

Mr. Whiteshot is writing another book. He is gathering his material by visiting the various fields of the country, mostly on foot. He has been in Pennsylvania recently, looking over the scenes of his early exploits.

We hope that Mr. Whiteshot will not pay too much attention to statistics and the like, which have already been reported in great detail. He has the opportunity given to few men to tell the story of petroleum from the standpoint of the man who serves as the physician in the case when a new field is born. That kind of story has not yet been written.

In the language of today, if Mr. Whiteshot will just "be himself," he will contribute a classic.

* * *

ONE thing that we, personally, are getting quite tired of is the constant comment on the inefficiency of the old time operators. Of course they were inexpert, as measured by engineering standards, and most of them don't claim they were anything else. But they were pioneers and that class of worker simply does the best he knows how to do. Daniel Boone was inexpert in that he did nothing of any great consequence in the way of building bridges and roads, but he blazed through the unknown lands a trail that endures forever.

The oil industry needs more engineering—and it is getting it right along. The mistakes of the early operators are being corrected right along. Those who are correcting the mistakes most efficiently, we notice, are those who have the right perspective on the whole thing; who do not look at the early day producer as a criminal or a fool but simply as a man who achieved the best he could with the new and crude tools he himself had to fashion.

What does H. T. really mean?

Literally it means High Test and it is part of the name of a new steel welding rod—

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Actually it means 20% stronger welds and 20% faster welding.

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The development of these rods is typical of Oxweld's service in making the oxy-acetylene process increasingly useful.

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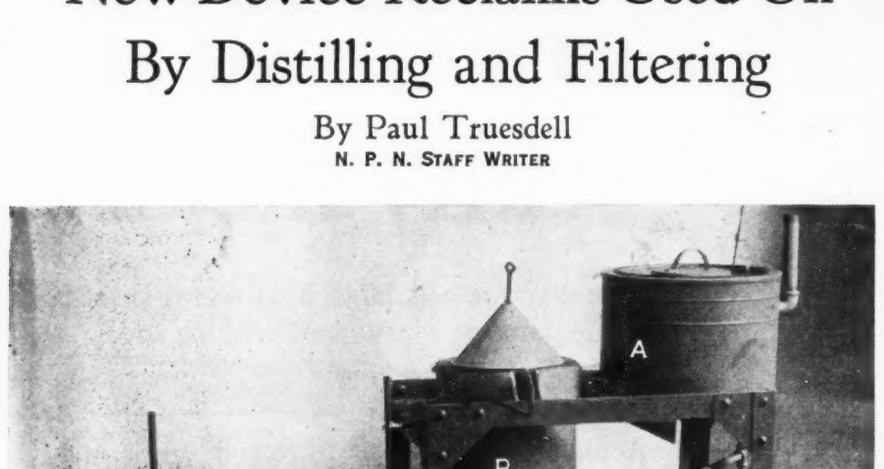
WELDING AND CUTTING APPARATUS

New Device Reclaims Used Oil By Distilling and Filtering

By Paul Truesdell

N. P. N. Staff Writer



The Alten oil reclaimer. A is the strainer tank, B is the still with the dephlegmator on top and C is the filtering tank

CLEVELAND, Nov. 2.

THE Johnston & Jennings Co., Cleveland has brought out an oil reclaimer for restoring to usefulness dirty, diluted oil drained from the crankcases of trucks, buses and passenger cars.

The Alten reclaimer, as it is called, was displayed at the convention of the American Electric Railway Association held recently in Cleveland, and it attracted much interest among the visitors. Street railway men the country over realize keenly that bus transportation is becoming more and more a factor in city traction systems and they are for the most part taking on the bus as an auxiliary and feeder to their rail systems rather than let the bus business get into the position of a serious competitor fighting them keenly for business.

The taking on of buses brings with it an entirely new set of problems and difficulties, one of the chief of which is to maintain proper lubrication while at the same time keeping down the cost of operation to the lowest possible point. Bus operators whose vehicles run from 150 to 300 miles a day, must change the oil frequently or run the risk of undue wear, necessitating expensive engine repairs and down time.

At the same time, the cost of buying oil to be thrown away after a few hundred miles of use is heavy. For this reason the reclaimer which it is said, will take oil after it has run as much as 2000 miles in an automobile engine and regenerate it to a condition as serviceable as before it was used, is a matter of exceeding interest to them.

Straining, distilling and filtering are the three methods used in the Alten reclaimer for restoring the used oil to the condition of a new lubricant. The accompanying cut shows the device complete. The oil moves by gravity through the system. A is the strainer tank. The strainer is placed in the middle of the tank into which the used oil is dumped. The bottom of the strainer consists of two metal perforated plates with ordinary cotton waste between them.

Strainer Removes Grit

THE oil passes upward through the cotton waste which removes the grit, metallic particles and so on. From the straining tank the oil gravitates into B which is called the evaporator. This is really a cast iron kettle or still.

Placed vertically in the center of the still is a pipe, open at both ends, reaching from above the liquid level to near the bottom. In the center of this pipe is an electric heating element which can be regulated to any temperature desired. When heating of the oil starts, the hot oil rises through the pipe and the cold oil rushes in to take its place so that thorough circulation of the oil goes on as the heating proceeds.

The oil is heated to a temperature sufficient to drive off the light ends, say 450 F., but not high enough to cause any cracking of the lubricating oil itself. The evaporator is surmounted by a dephlegmator in the form of a sheet metal cone, the lower edges of which rest in a trough running around the upper edge of the still jacket. The vapors, striking the inside surface of the cone, are partly condensed and vapors and condensate pass into the annular jacket surrounding the strainer tank, thereby heating up the dirty oil to a temperature that breaks up the emulsion and settles out or evaporates the water. There is said to be almost no water in the oil when it reaches the still. The preheating of the dirty oil also reduces the cost of operation by cutting down the amount of electric current necessary to be applied to the still to drive off the light ends of the oil.

C is the filtering tank into which the hot oil passes from the still. In the center of the tank are placed the filtering units which, in the standard type of reclaimer, consist of two aluminum pans, one above the other, containing together 25 pounds of a filtering compound. The heat of the oil coming over from the still maintains a temperature that promotes efficient filtering.

The oil is introduced near the bottom of the filtering tank and rising, overflows the edges of the topmost filter pan, passing downward through the filtering compound into a compartment at the bottom of the tank whence it is drawn off as finished oil.

Serves Double Purpose

THE still is surrounded by a jacket which is kept filled with the filtering compound used in the system. This serves a double purpose. First, the filtering compound acts as an insulator, keeping the heat in the still, and second, the heat dries out the filter material. As shown in the cut, the bottom of the still jacket is a cone which is closed by a sliding gate by opening which, the dried filtering compound can be drawn out for use in the filter.

In order to demonstrate the effectiveness of the reclaiming device, a sample of the Vacuum Oil Co.'s Mobile B, which had been run 2000 miles in a bus operated by the Cleveland Railway Co., was run through and analysis made by the Textor Chemical Laboratories of Cleveland of the reclaimed oil and new Mobile B.

The test showed the following comparison between the new and the reclaimed oils.

New Mobile B	Reclaimed Mobile B
Vis at 210, 81.6 Sec.	90.2 Sec.
Flash, 422 F	458 F.
Fire, 464 F	508 F.

Recovery of good oil is estimated at 80 per cent or more of the dirty oil treated.

The capacity of the reclaimer on display is about half a gallon of oil per hour. Its capacity is limited by the size of the filter and by enlarging the filter throughput of oil could be increased considerably. The cost of reclaiming the oil ranges, it is said from 5 to 10 cents a gallon, averaging 7 cents.

The name, Alten, is derived from the name of the inventor of the reclaimer, A. H. Tennent. Mr. Tennent was brought up in the oil business having been born in Bradford, Pa. His father, J. C. Tennent, was a scout in the Pennsylvania fields in the days when the drilling in a 500-barrel well would break the crude oil market to the extent of a dollar or two a barrel.

Mr. Tennent says he has been in every refinery east of the Rocky Mountains except the plants of the Standard companies, either as an operating man or as a Fullers earth salesman. He was engaged in the latter occupation for a number of years. About a year and a half ago, Mr. Tennent tackled the problem of devising a method of reclaiming used oil.

He worked for some time in a refinery at Franklin, Pa., studying all phases of the filtering process, being convinced that the answer to the reclaiming problem lay largely in filtering. A year ago he moved to Cleveland.

While in the present model the temperature reached in the still is regulated by the length of time the oil remains in the still, it is planned to make the device foolproof by installing on the electric line an automatic switch that will shut off the current when a predetermined temperature is reached. This would make burning or cracking of the oil impossible.

Besides the bus operating men, a number of lubricating specialists of oil companies were present at the convention and they also were interested in the reclaimer. One of them suggested that if the theory proposed by R. E. Wilson of the Standard Oil Co. of Indiana is proved sound, that is, that dilution of the crankcase oil can be minimized by putting in a "pre-diluted" oil into the crankcase to begin with, such a prediluted oil could be produced by the reclaimer. The way to do it would be to regulate the temperature in the still to the point that would drive off only the desired proportion of the light ends.

The reclaimer is designed to appeal primarily to bus operators, taxicab companies and other organizations using a large number of motor vehicles. It may also find a market among oil companies themselves, being installed at some central point by companies having a large crankcase draining business.

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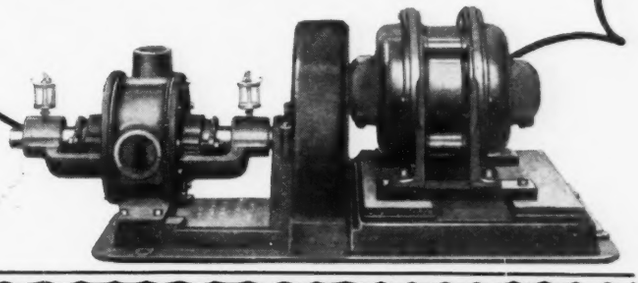

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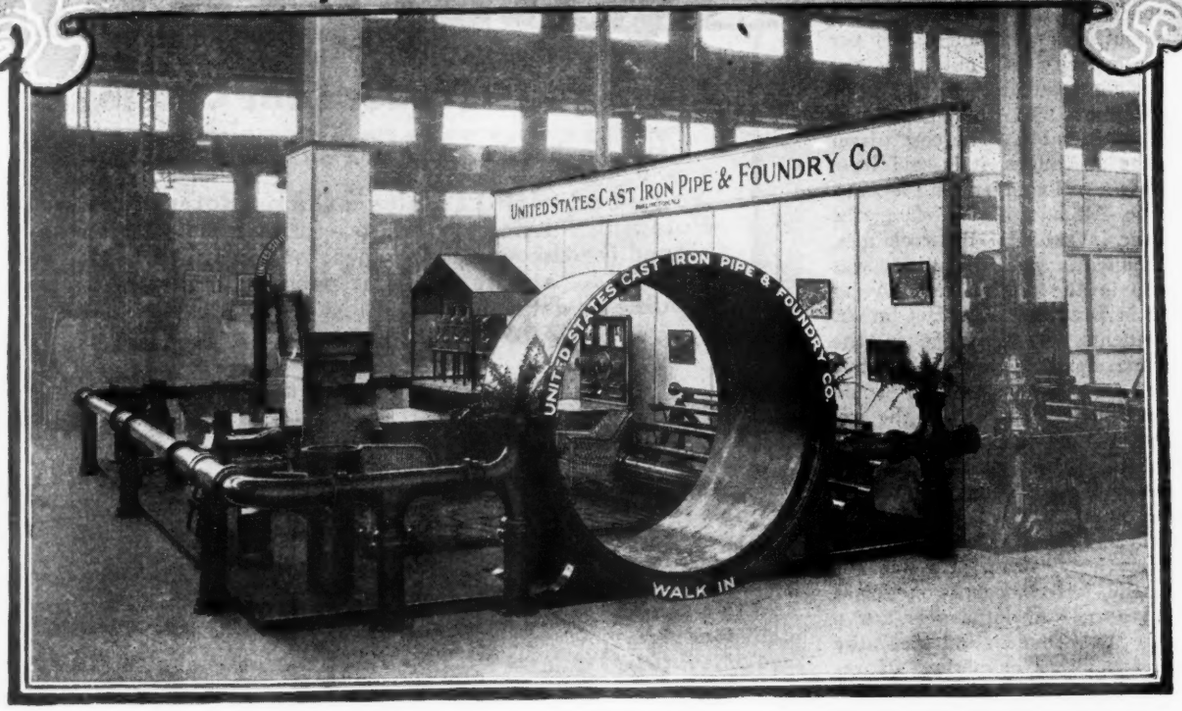

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Bar Association's Mineral Law Section Constructive Agency for Industry

By Paul Wagner
N. P. N. Staff Writer

HOUSTON, Oct. 30.

THE newly created section on mineral law of the American Bar Association will offer an opportunity not previously presented for the lawyers of the country to study the problems of the petroleum industry, according to John C. Townes, general attorney of the Humble Oil & Refining Co., Houston, its chairman.

"Discussions before this section of the association," says Mr. Townes, ought to assist our courts and should result in more uniform construction of the various state laws; and lessen the expensive confusion now existing."

Mr. Townes says that in his judgment this new section can be made of real value to the public and to the oil and mining industry,—"that is, it is possible for it to be really worth while if proper interest is taken in it and if it is properly directed."

Industry's Growth Stressed

IN the recent formation of the mineral law section of the association at Denver it was stressed that the oil and gas industry has progressed tremendously in the last 25 years; that it is no longer a small business touching the interest and lives of a comparative few; that it is now one of the principal industries of the United States and its products have become an important factor in the industrial life of the country and the home life of every individual.

"There is scarcely a citizen," says Mr Townes, "who is not a direct consumer of petroleum products, as motor fuel or otherwise. The development of oil and gas territories and the production, transportation, refining and marketing of these products are now vital to our national life.

"Steadily increasing demands for greater production and better products have induced thousands of individuals and companies to invest many millions of capital in this industry.

"The value of the petroleum produced yearly in the United States exceeds the value of the wheat crop and vastly exceeds the value of the cotton crop. These comparisons with our other national resources could be multiplied, but the above are doubtless sufficient to illustrate the comparative importance of the industry."

After calling attention to the various states in which oil production reaches vast proportions, Mr. Townes refers to the importance of refineries existing in these and additional states, adding:

As this industry has developed (and it is still expanding and growing) many new legal problems have arisen; new statutes are being passed to meet new conditions and new and perplexing questions are being presented to the courts.

"New legal phases of the marketing problem are currently arising. New and special tax laws are to be construed,—gross production tax, gallonage tax and newly enacted franchise taxes. The status of royalty owners has new aspects. New conservation laws and the extension of the police power must be considered and construed.

"The various geo-physical methods that have been developed in the last few years and are still developing, having for their purpose the examination of the sub-surface of the land to detect the presence of supposed oil bearing or oil indicating structures by means of scientific appliances located on the surface, are already giving rise to legal questions that have never before been presented to the profession and with regard to which there are no legal precedents.

State Laws at Variance

"IN addition to the fact that the oil industry presents more novel and unsettled law questions than any other industry in our country today, we have present a confusing situation due to the fact that on many vital questions the courts of different states have reached different and conflicting decisions; so that an oil lease provision is construed in one way in one jurisdiction and immediately across the state line in the next jurisdiction it is construed in a different way.

"These and many other questions are now engaging the attention of thousands of lawyers and the solution of these various problems affects not only the oil and gas companies, and royalty owners, but the general public as well."

An example of the conflict in state laws from one state to another is found in the situation applying to casinghead gas used in the manufacture of raw natural gasoline. In one state the courts have held that royalties may be paid under the provisions of the type of leases which provide for annual rental in a specified sum for gas utilized from each well. Another state has held that gas used in the manufacture of raw natural gasoline is legally "oil" and that one-eighth royalty applies unless the lease instrument specifically provides differently for the gas so used.

Mr. Townes expresses the hope that the legal representatives of all the oil and mining interests of the country will affiliate themselves with the new section of the American Bar Association and take an active part in its work.

Next Meeting In Chicago

PENDING a contemplated midwinter meeting of the council of the mineral law section of the association, which probably will be held in Chicago in December, plans have not been worked out with regard to a definite program for the future.

Creation of the new section of the American Bar Association at its Denver meeting resulted from the feeling of lawyers interested in mineral law that there should be some forum in which they could assemble and discuss the legal problems arising out of the industry, conflicting conservation laws in the various states and conflicts in the court decisions of the states.

It was suggested after the new section had been formed that it would be proper for it to do what it could to assist the commission appointed by the president to study the problems of conservation and also to lend its assistance wherever possible in connection with the statutory enactments of the various states.

Besides Mr. Townes as chairman the officers of the new section of the association are: Gurney E. Newlin, Los Angeles, vice chairman; Peter Q. Nyce, Washington, D. C., secretary; W .H. Francis, Dallas, treasurer;.

Members of the council include Earle W. Evans, Wichita, Kan.; J. S. Herold, Shreveport, La.; Jefferson Chandler, Los Angeles; William H. Ferguson, Denver; James F. Whalen, Pottsville, Pa.; Hugh H. Brown, San Francisco; C. B. Ames, Oklahoma City; R. F. Grant, Cleveland, Ohio.

COLUMBUS, MONT.—Columbus Filling Station, which H. A. Madson, who was formerly 14 years with the Mutual Oil Co., has bought from James J. Sacklen, is on the Yellowstone trail and maintains bulk storage for gasoline and kerosene. Arro Oil & Refining Co.'s products are being handled, as well as Skelly Oil Co.'s lubricants.

Mr. Madson reports that his station is in the farming and stock country near the mountains and that tourist traffic is heavy there during the summer. He invites all oil men to stop off on their way to Yellowstone and Glacier parks to fill their baskets with trout from the Stillwater county streams.

Asks Commission to Reverse Ruling On Texas-Louisiana Port Rates

By Special Correspondent
WASHINGTON, Nov. 1.

ATTORNEYS for oil companies exporting or importing petroleum and its products through Texas and Louisiana ports, after about eight months of hard work have achieved part of what they set out to do in the matter of rates on petroleum and its products for export, import and coastwise traffic. They have persuaded Irving L. Koch, an examiner for the Interstate Commerce Commission to recommend to that body that it reverse the decision it made June 24, 1925, wherein it indicated a basis for rates on petroleum and its products to Galveston typifying Texas ports, on the one hand and New Orleans representing Louisiana ports, on the other. He says the decision should be completely reversed in so far as rates on oil are concerned and things left just as they are.

In the decision of June, 1925, the freight rate body said that on shipments from points 100 or more miles nearer to the Texas than to the Louisiana ports the long standing equality of rates should be broken and the Texas ports given the advantage of lower rates. From north Texas, it said, the rates should be 4 cents per 100 pounds lower to Galveston than to New Orleans; from Oklahoma, 3 cents lower and from Kansas 2 cents lower.

Few Companies Represented

ONLY a few oil companies were represented at the hearing in the case. Seemingly, they did not grasp the importance, to them, of the allegation made by the Galveston Commercial Association that the making of equal rates, with few exceptions, to the two sets of ports was unduly prejudicial to the Texas ports, their traffic and their citizens. At the first hearing the appearance noted in the text of the Interstate Commerce Commission report, for oil companies, were E. P. Byars for the Western Petroleum Refiners' Ass'n.; U. S. Pawkett for the Grayburg Oil Co.; R. J. Wilkinson for the Mexican Petroleum Corp. of Louisiana; C. A. Talley for the New Orleans Refining Co., Inc.; and Philip Tensey for the Standard of Louisiana.

No producer, exporter or refiner appeared to testify that the parity of rates to the two groups of ports was hurting him.

After the decision was made, the oil companies took note of what would happen to them if rates were made so that from a certain territory all exports and imports would have to be through the Texas ports and from certain other territory all the traffic would have to go through the Louisiana ports.

They took particular notice because the Santa Fe, serving a large percentage of the refining points in Texas, Oklahoma and Kansas, taking every advantage possible under the 100 mile rule, filed tariffs that made the oil industry of the southwest gasp. It followed its policy, often denounced by the rate regulating body, of trying to force all oil originating on its line to go to markets on its rails or out of the country via ports served by it; or if it went only part of the way over the Santa Fe, of paying such tribute to it that the Santa Fe treasury would be just about as well off as if it went Santa Fe all the way.

Such protests were made that the case was re-opened and the proposed rates on oil and grain were suspended, the suspension being for investigation purposes.

Examiner Koch conducted the further investigation. Instead of a handful of oil attorneys and traffic managers as at the first hearing, the second hearing brought out twenty-six men, generally to protest about the oil rates.

Says Differential is Harmful

KOCH said the record clearly showed that the differential adjustment ordered in 1925 would do harm and not good. Among the things pointed out was that the western part of Oklahoma group 3 would be in differential territory and be compelled to use only Texas ports for export or coastwise trade. The differences of 4, 3 and 2 cents, New Orleans over Galveston would mean, he said, differences of a quarter, a fifth and an eighth of a cent a gallon and that oil traffic men had testified that a difference of an eighth of a cent per gallon would turn an export sale and that frequently a sixteenth of a cent would do that trick. He said the effect of the adjustment would be to put some of the interior and Louisiana refiners out of the export market altogether. He said the majority of refiners expressed a preference for the situation as it was rather than the one proposed by the first report.

Northern Texas refiners, he said, contended they were entitled to reasonable rates to Texas ports and then rates to the Louisiana ports no higher than to the Texas ports. Examiner Koch said that adherence to the first report would mean refiners in Louisiana would have to absorb the differences caused by the freight rates or get out of the export market and that the proposed adjustment would put the exterior refiners at a great, if not absolutely impossible disadvantage in comparison with the Texas coastal refiners. Yet none of the latter, either at the first or second hearing had asked for such an adjustment. He indicated, as plainly as he could without saying so in so many words, that what the lines serving Texas ports wanted was to get all the business and leave none for the lines serving Louisiana ports, instead of merely an even break.

Texas Exports Heavier

AMONG other things brought out was the fact that in 1924 the Texas ports exported and imported 18,145,977 tons of petroleum and its products while the Louisiana ports reported only 789,040; and that in the 10-year period 1914-24 the increase in exports and imports in the Sabine district ports of Texas was 159.7 per cent; from Galveston, 1625.99 per cent while the oil traffic of the Louisiana ports increased only 89.9 per cent. It was further shown that, notwithstanding Galveston claimed she was not getting her share of the oil traffic, 54 per cent of the oil from the territory nearer her than to New Orleans was handled through Texas ports. In short, that the Texas ports were not discriminated against and that Galveston was harping on small differences in distance as if they were actually hurting her.

The oil companies represented in the case and their attorneys, are as follows:

H. D. Driscoll and H. E. Ketner for Phillips Petroleum Co.

Ed. P. Byars, for North Texas Petroleum Traffic Bureau, Fort Worth Elevators Co., Fort Worth Freight Bureau.

H. F. Hoffmaster, Jr., for Swiftsure Petroleum Co.

Koerner, Fahey & Young, J. R. Van Slyke and E. W. Sieboldt for Roxana Petroleum Corp.

H. W. Roe and L. W. Witte for Mid-Continent Petroleum Corp.

W. W. Klingensmith for Transcontinental Oil Co.

C. L. Seideman for Imperial Refining Co.

A. C. Holmes for Empire Refineries, Inc.

S. B. Myers, for Independent Oil & Gas Co.

C. F. Dowd for Tidal Refining Co.

H. C. Mulroy for Marland Refining Co.

F. C. Clark, for Crown Central Petroleum Corp.

C. R. Musgrave for Phillips Petroleum Co.

J. W. Liddell for Texhoma Oil & Refining Co.

E. H. Porter for Atlantic Oil Producing Co.

Henry C. Keene for Carson Petroleum Co., New Orleans Refining Co., Sinclair Refining Co. of La., Standard Oil Co. of La., and Standard Oil Co., in N. J.

E. A. Starr for Texas Pacific Coal & Oil Co.

E. L. Howard for Sun Oil Co.

James F. Lawrence and A. F. Winn for Kansas Oil Traffic Committee.

B. J. Burchett for Shaffer Oil & Refining Co.

T. E. Duggan and James J. Shaw for The Texas Co.

J. R. Davis and C. H. McNair for Humble Oil & Refining Co.

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Roster of Oil Associations

National Petroleum News

American Association of Petroleum Geologists. Secretary, F. L. Aurin, Marland Oil Co., Ponca City, Okla.

American Chemical Society, Petroleum Division, Mellon Institute, Pittsburgh, Pa. Secretary, George A. Burrell, 1501 Columbia Bank Bldg., Pittsburgh, Pa.

American Gas Association, 342 Madison Ave., New York City. Secretary, Alexander Forward.

American Institute of Mining and Metallurgical Engineers, Petroleum Division. 29 West 39th St., New York. Chairman, Petroleum Section, F. Julius Fohs.

American Oil Burner Association, 350 Madison Ave., New York City. Executive Secretary, Leod D. Becker.

American Oil Chemists Society, 705 Tchoupitoulas St., New Orleans, La. Secretary-Treasurer, J. C. Helm.

American Oil Men's Association, 624 South Michigan Ave., Chicago, Ill. James A. Gilmore, Secretary and Manager.

American Petroleum Institute, 250 Park Ave., New York City Secretary, R. L. Welch.

American Society for Testing Materials, 1315 Spruce St., Philadelphia, Pa. Secretary-Treasurer, C. L. Warwick.

Arkansas Petroleum Club, Secretary, James P. Lavery, Petroleum Supply Co., ElDorado, Ark.

Arkansas-Tennessee Oil Marketers Association. Secretary, R. E. McKellar, care Diamond Oil Co., Memphis, Tenn.

Association of Oil Jobbers of Mississippi, Jackson, Miss. President, R. C. Clark, Independent Oil Co., Tupelo, Miss.

Association of Natural Gas Supply Men, Inc., 905 Oliver Bldg., Pittsburgh, Pa. Secretary, Guy F. Batchelor.

Association of Natural Gasoline Manufacturers, 504 A-B Cosden Bldg., Tulsa, Okla. Secretary, A. V. Bourque.

Association of Producers of Petroleum in Mexico, 17 Battery Place, New York, Director, Guy Stevens.

Association of Producers of Petroleum in Venezuela, 17 Battery Place, New York City. Director, Guy Stevens.

Chamber of Mines & Oils of California, 206 So. Spring St., Los Angeles, Calif.

Cincinnati Oil Club. Secretary, George H. Siemer, c/o Merchants Oil Co., Cincinnati, O.

Detroit Petroleum Club. Secretary, Frank McSweeney, Cities Service Oil Co., General Motors Bldg., Detroit, Mich.

Eastern Kentucky Oil Producers Association, Ashland, Ky. Secretary, David Browning.

El Paso Petroleum Club. President, A. L. Behringer, Home Oil Co., El Paso Tex.

Georgia-Alabama Independent Petroleum Marketers Association. Secretary-treasurer, W. L. Moore, Wofford Oil Co. of Georgia, Atlanta, Ga.

Greater Chicago Oil Men's Club. Secretary, Mel Keim, Apex Motor Fuel Co., 4555 W. 26th St., Chicago, Ill.

Gulf Coast Independent Oil Producers Association, 403 Goggan Bldg., Houston, Tex. Secretary, T. L. Smith, Jr.

Illinois Petroleum Marketers Association. Secretary, G. A. Primm, Chamber of Commerce Bldg., Springfield, Ill.

Independent Oil Men of America, 624 So. Michigan Ave., Chicago, Ill. (Advertising branch of National Petroleum Marketers Association.)

Independent Oil Men's Association of Massachusetts. Secretary, F. E. Bergfors, care Quincy Oil Co., Quincy Adams, Mass.

Independent Oil Men's Association of New England. Secretary, I. H. Farrar, Berkshire Oil Co., Worcester, Mass.

Independent Oil Marketers Association of Atlanta, Ga. Secretary, J. H. Smitha, care Community Oil Co., Atlanta, Ga.

Independent Petroleum Marketers Association of California, Inc., 930 Marsh-Strong Bldg., Los Angeles, Calif. Secretary and Manager, H. H. Maxson.

Indiana Independent Petroleum Marketers Association. Field Secretary, Sam T. Hurd, Connersville, Ind.

Iowa Independent Oil Men's Association, 225 Fifth St., Des Moines, Ia. Secretary, M. L. Long.

Kansas Oil Men's Association, 423 First National Bank Bldg., Wichita, Kan. Secretary, J. A. Motter.

Kentucky Oil Men's Association, Inc., 610 Trust Co. Bldg., Lexington, Ky. Secretary, Thomas S. Scott.

Michigan Independent Oil Men's Association, 1005 Grand Rapids National Bank Bldg., Grand Rapids, Mich. Secretary, James A. Gilmore.

Mid-Continent Oil & Gas Association, 505 Cosden Bldg., Tulsa, Okla. Secretary, Harry H. Smith.
Kansas-Oklahoma Division, 505 Cosden Bldg, Tulsa, Okla. Secretary, Harry H. Smith.
Louisiana-Arkansas Division, 724 Giddens-Lane Bldg., Shreveport, La. Secretary, Joseph B. Elam.
Texas Division, P. O. Drawer 1567, Dallas, Texas. Secretary, J. P. Laney.

Minnesota Petroleum Association, 638 Builders Exchange, Minneapolis, Minn. Secretary, Paul E. Hadlick.

Mississippi Oil Men's Association. Secretary, J. J. McEwen, 501 Capital National Bank Bldg., Jackson, Miss.

Missouri Oil Men's Association, 217 Dwight Bldg., Kansas City, Mo. Secretary, George S. Allee.

National Association of Independent Oil Producers, 414 Atlas Bldg., Tulsa, Okla. President, William H. Gray.

National Gasoline Dealers Association, Inc., 280 Madison Ave., New York City. Secretary, Thomas P. McKee, Jr.

National Petroleum Association, Munsey Bldg., Washington, D. C. Washington Counsel, Fayette B. Dow.

National Petroleum Marketers Association, Blum Bldg., 624 South Michigan Ave., Chicago., Ill. President, L. V. Nicholas.

Natural Gas Association of America, 905 Oliver Bldg., Pittsburgh, Pa. Secretary, Guy F. Batchelor.

Natural Gas & Petroleum Association of Canada, Chatham, Ont., Canada. Secretary, S. A. Morse.

Nebraska Independent Oil Men's Association, 416 Terminal Bldg., Lincoln, Neb. Secretary, C. M. Sutherland.

New York State Oil Producers Association, Wellsville, N. Y. President, Lewis H. Thornton.

New York State Petroleum Marketers Association, 1201 So. Salina St., Syracuse, N. Y. Secretary, Benjamin A. Javitz.

North Central Ohio Petroleum Club, 489 Cherry St., Marion, O.

North Dakota Petroleum Association, acting head, H. M. Wilson, care International Oil Co., Minot, N. D.

Northwest Independent Oil Association. Secretary, C. H. Brown, care Arro Oil & Refining Co., Lewistown, Mont.

Northwestern Pennsylvania Oil Producers Association, 78 Main St., Bradford, Pa. President, A. Edward Booth.

Ohio Gas & Oil Men's Association, 811 First National Bank Bldg., Columbus, O. Secretary, William H. Thompson.

Ohio Petroleum Marketers Association, 616 Commerce Bldg., Columbus, O. Secretary, R. W. Palmer, Accurate Measure Oil Co., 1884 E. Broad St., Columbus, O. Field Secretary, W. C. Hughes

Oil Men's Association. Secretary, F. [illegible] Mitchell, Clinton Oil Co., Cleveland,

Oil Trade Association of Philadelph[illegible] Inc. Secretary, Howard M Rogers, [illegible] Arch St., Philadelphia, Pa.

Oil Trades Association of New York, In[illegible] 35 So. William St., New York Ci[illegible] Secretary, Joseph C. Smith.

Oklahoma Oil Jobbers Association, [illegible] Fidelity National Bank Bldg., Okl[illegible] homa City, Okla. Secretary, C. [illegible] Kinney.

Oklahoma Oil Marketers, Inc., P. [illegible] Box 755, Enid, Okla. Secretary, W. [illegible] Blackburne.

Okmulgee District Oil & Gas Associatio[illegible] Okmulgee, Okla. Secretary, Charles [illegible] O'Neill.

Osage Oil & Gas Lessees Association, 5[illegible] Cosden Bldg., Tulsa, Okla. Secretar[illegible] Harry H. Smith.

Pennsylvania Grade Crude Oil Associ[illegible] tion, 209 Chambers Bldg., Oil City, P[illegible] Secretary, R. J. Alexander.

Petroleum Club of Central New Yor[illegible] Secretary, George R. Casey, Crown C[illegible] Co., Syracuse, N. Y.

Pierce County Independent Gasoline [illegible] Oil Dealers Association, Executi[illegible] Secretary, J. H. Stine, 1009½ Paci[illegible] Ave., Tacoma, Wash.

Purchasing Agents Association of Tul[illegible] 307 So. Cincinnati St., Tulsa, Okla. Se[illegible] retary-Treasurer, O. V. Borden.

Rocky Mountain Independent Oil Me[illegible] Association, (formerly Colorado Petr[illegible] leum Club), 411 Exchange Bldg., De[illegible] ver, Colo. Secretary, A. Oberholtz, [illegible]

Rocky Mountain Oil & Gas Associatio[illegible] P. O. Box 1559, Casper, Wyo. Secreta[illegible] C. W. Sparr.

Rocky Mountain Oil & Gas Associatio[illegible] Montana Chapter, 222 Ford Bld[illegible] Great Falls, Mont. Secretary, Walt[illegible] F. Brittan.

South Dakota Independent Oil Jobbe[illegible] Association, Sioux Falls, S. D. Secr[illegible] tary, F. H. Buehler, care Dacotah [illegible] Co., Madison, S. D.

Southern Petroleum Jobbers Associatio[illegible] Secretary, D. C. Patterson, Camde[illegible] S. C.

St. Louis Petroleum Club, 1430 So. Va[illegible] deventer Ave., St. Louis, Mo. Secr[illegible] tary, R. F. Leinberger, Blackm[illegible] Pump Co., St. Louis, Mo.

Springfield Petroleum Club. Secretar[illegible] Ross Lock, c/o Lock Bros., Oil C[illegible] Springfield, Ill.

State Executives Club. Secretary, Pa[illegible] E. Hadlick, Minnesota Petroleum A[illegible] sociation, 638 Builders Exchange, Mi[illegible] neapolis, Minn.

Technical Club of Oklahoma, 208 Fish[illegible] Bldg., Tulsa, Okla. Secretary, R. [illegible] Ginter.

Tennessee Independent Oil Men's Ass[illegible] ciation, Secretary, G. H. Alsup, Jr., ca[illegible] Consumers' Supply Co., Murfreesbo[illegible] Tenn.

Texas Independent Oil Men's Associati[illegible] Secretary, L. A. Greene, care Rad[illegible] Petroleum Co., Fort Worth, Tex.

Virginia Independent Oil Men's Asso[illegible] ation. President, J. B. Belk, c/o Alb[illegible] marle Oil & Gas Co., Inc., Garrett S[illegible] Charlottesville, Va.

West Virginia Oil and Natural Gas A[illegible] sociation, Fairmont, W. Va. Secretar[illegible] Treasurer, Edwin Robinson.

West Virginia Oil Marketers Associati[illegible] 513 Peoples Exchange Bank, Charle[illegible] ton, W. Va. Secretary and Treasur[illegible] D. E. Frierson.

Western Petroleum Refiners Associati[illegible] 504 Cosden Bldg., Tulsa, Okla. Ma[illegible] aging Director, Howard Bennette.

Wisconsin Independent Oil Jobbers A[illegible] sociation. Field Secretary, R. A. Ov[illegible] holser, Gay Bldg., Madison, Wis.

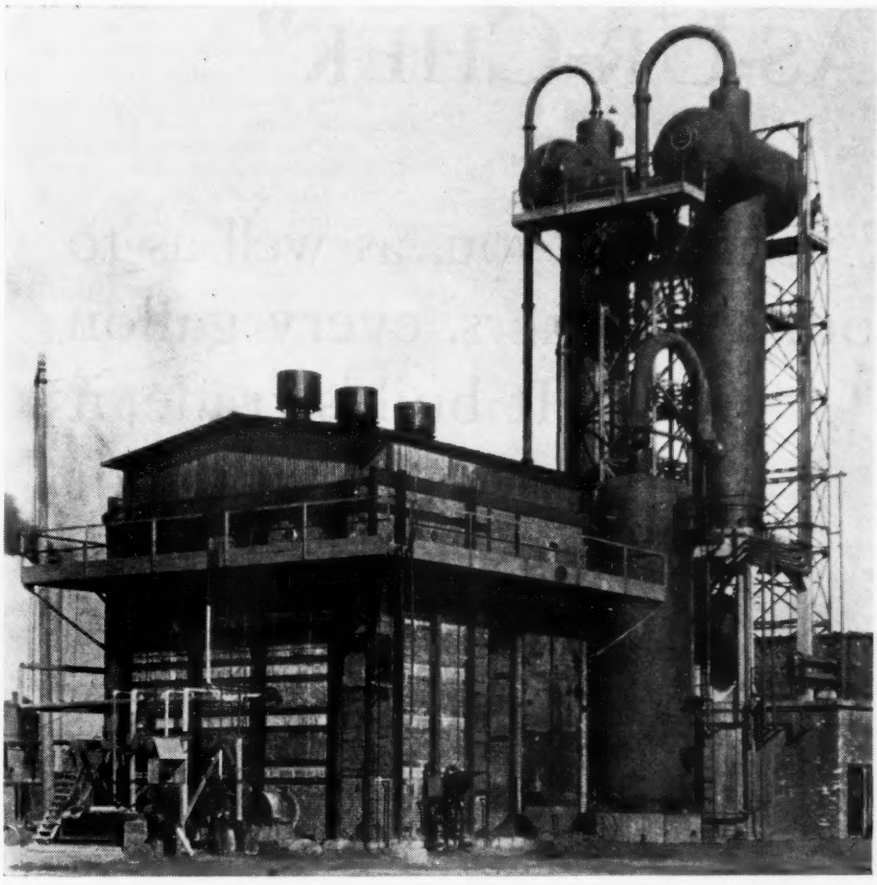
Wyoming Petroleum Club. Secreta[illegible] G. H. O'Donnell, 847 So. Lincoln [illegible] Casper, Wyo.

New Equipment for Plant Improvement

Personal Notes of the Manufacturers

National Petroleum News

High Efficiency Tube Still Runs 5000 Barrels of Crude a Day



HEREWITH is the photograph of a tube still capable of handling 5,000 barrels of crude a day, which was installed some months ago at the plant of the Indian Refining Co., Lawrenceville, Ill. The still was designed and built by the Cross-Widdell Engineering Co. The still takes off the gasoline, kerosene, gas oil and wax distillate cuts in one operation. The cost of installing one of these tube stills is around $200,000. It is hard to imagine building a skimming plant of ordinary design having a capacity of 5000 barrels a day, for a sum anywhere near $200,000.

The fuel economy of this still is said to be excellent. It is fitted with a gas recirculating system which sucks the half burned hot gases out at the back of the furnace through a tunnel and returns them to the furnace at the firing end by means of a high speed fan. The air for combustion enters the furnace through a bank of tubes in the flue, flowing countercurrent to the outgoing flue gases, thereby stripping them of their heat and entering the furnace at high temperature.

The gas recirculating equipment which has been described in previous issues of N. P. N. can be seen in the foreground at the left of the photograph. The system of reboilers and fractionating towers can be seen in the background.

* * *

The Newton Process Manufacturing Co. of Fullerton, Cal., builders of gasoline plants, announces that I. B. Funk, a consulting engineer of Los Angeles, has associated himself with the company as engineering advisor. Mr. Funk has had wide and varying experience in the oil business, particularly in the design and operation of natural gasoline plants.

For the past five years, Mr. Funk has devoted himself to research work on natural gasoline absorption and refinery distillation and fractionation. He has perfected a new fractionating still to be known as the Funk combined still, fractionator and condenser. It is expected that new and improved equipment will be brought out by the Newton company shortly. It is stated that a complete description of the Funk apparatus will be published soon.

* * *

Botfield Refractories Co., Philadelphia, announces the appointment of several distributors in the middle west for its product, Adamant fire brick cement. The distributors are: Westwater Supply Co., 150 North Third st., Columbus, Ohio, the Klinger-Dills Co., 129 North Jefferson st., Dayton, O., Coan Equipment Co., 236 Murray st., Fort Wayne, Ind., and the Cleveland Tool & Supply Co., 1427 West Sixth st., Cleveland, O.

* * *

Wilson-Snyder of Pittsburgh, has put out bulletin W-178-B describing its line of cargo pumps for loading and unloading tank steamers. The Wilson-Snyder cargo pump, according to the bulletin, made an enviable reputation pumping Mexican heavy crude and topped oil. The bulletin contains a table showing steam cylinder and piston diameter of pumps for various capacities based on 12 A. P. I. gravity oil, in the line they handle.

Their line covers the range from a pump with 5-inch diameter steam cylinder, 3½-inch piston and a capacity of 55 barrels an hour, to one with 18-inch steam cylinder, 14-inch piston and a capacity of 2300 barrels an hour.

* * *

The United States Air Compressor Co., 5314 Harvard Ave., Cleveland, O., has developed a new U. S. Vacuum breaker valve for car washing equipment, which it claims is a distinct advantage over the old-fashioned method of using a barrel when washing cars. The valve can be connected direct to the city water pipe line and it allows a working pressure of 300 pounds to be maintained, the company states. This company makes a complete car washing unit.

* * *

Puritan Engineering Corp., Fort Wayne, Ind., announces its newest product, the Puritan Rekording Funnel, which has been designed to provide an accurate check of all tank wagon deliveries at the point of delivery and also to provide at the delivery point a reliable and continuous record of all receipts. It is a portable device and is equipped with a specially designed metering mechanism which records in gallons

When you install your new pumps have them equipped with "MEAS-UR-CHEK"

It verifies to you, as well as to your customers, every gallon sold. It builds trade, it holds trade, it ends "errors" in measure at the pump, stops shortages between auditor's and tank driver's figures.

This "Chek" gives you ample opportunity to feature your brand name. On the back of the "Chek" other advertising can be imprinted.

Full details in new circular describing "Meas-ur-chek" in word and picture. Write today to Dept. 77.

GASOLINE REGISTER CO.
4619 Ravenswood Avenue
CHICAGO

Protest Cutting Station Margin to 3 Cents

LOS ANGELES, Nov. 1.—A flurry among owners and operators of Independent service stations in California resulted from the decision of the larger oil companies to allow the service station a profit of only 3 cents a gallon against an old differential of 4 cents.

The organization of Independent service station operators at San Diego agreed to refuse to retail at less than 4 cents margin and posted notices to that effect, selling gasoline at 1 cent above the price asked by the larger company owned stations. They used newspaper space in an appeal to the public.

Representatives of refining companies say the 4 cent margin made it possible for some of the Independent stations to cut the price 1 or 2 cents under the major oil company's own stations.

A few refiners manufactured lower grades of gasoline which sold from 2 to 3 cents under the standard grades, but which met city specifications, thus making it further possible for the cut rate station to operate.

The Los Angeles Independent service station owners held a special meeting Oct. 4 and called on the public to support them in maintaining a 4 cent margin.

Regardless of the protest, since the change in the differential to a lower level, the price cutting war is just simmering. with no really serious deflections. The large companies offer no objections to the sale of an inferior product at a lower price, figuring that the public knows what it is getting for its money, but they do very seriously object to the sale of well known brands of first quality at bootleg prices.

Argue Red Hat Trade Mark

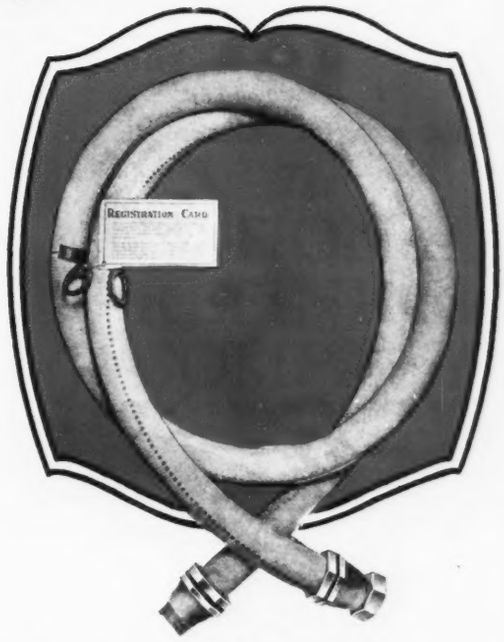
WASHINGTON, Nov. 1.—Attorneys for the Standard Oil Co. of Indiana and the Independent Oil Men of America appeared before an examiner in the patent office Oct. 21 to argue on the petition in opposition filed by the Standard against the application of the Independents for a registration of the Red Hat as a trade mark for their gasoline. The Standard contended that the Red Hat would tend to confuse the buying public and therefore infringe upon the business built up by it under the Red Crown mark for its gasoline.

The Independents argued that the public would do nothing of the kind and asked for grant of protection for the mark they intend to use for their products unless restrained by the patent office, or the courts. The controversy is still in the patent office.

HYANNIS, MASS.—Cape Cod Oil Co. is distributor here for Tydol gasoline and Veedol motor oil, products of the Tide Water Oil Co., New York. F. H. S. Hyde is president, and E. W. Gould, Jr., treasurer of the Cape Cod company.

flexible

During Cold Weather



WHEN it is cold, ordinary hose gets "stiff as a board." Then you appreciate the flexibility that is inherent in every length of REX Gasoline Hose.

From the inner packing between the interlocking steel core, to the outer jacket, every part contributes to flexibility and durability. REX Hose is easy to handle, saves time—always on the job for speedy service.

REX Gasoline Hose is sold under a guarantee to give you absolute satisfaction. Try it and you'll always use REX. Send for full information.

CHICAGO TUBING & BRAIDING COMPANY
260 N. Clinton St. Chicago, Ill.

REX GASOLINE HOSE - REX BELL COUPLINGS
Guaranteed to give Satisfaction

Only 3 Moving Parts

The Dunning Air Leader, like all Dunning Air Compressors, has but THREE MOVING PARTS; One Piece Piston; Hardened and Ground Shaft; Collar made of Toughest Bronze.

If you need constant air pressure at low cost ask for the facts about our DUNNING AIR LEADER.

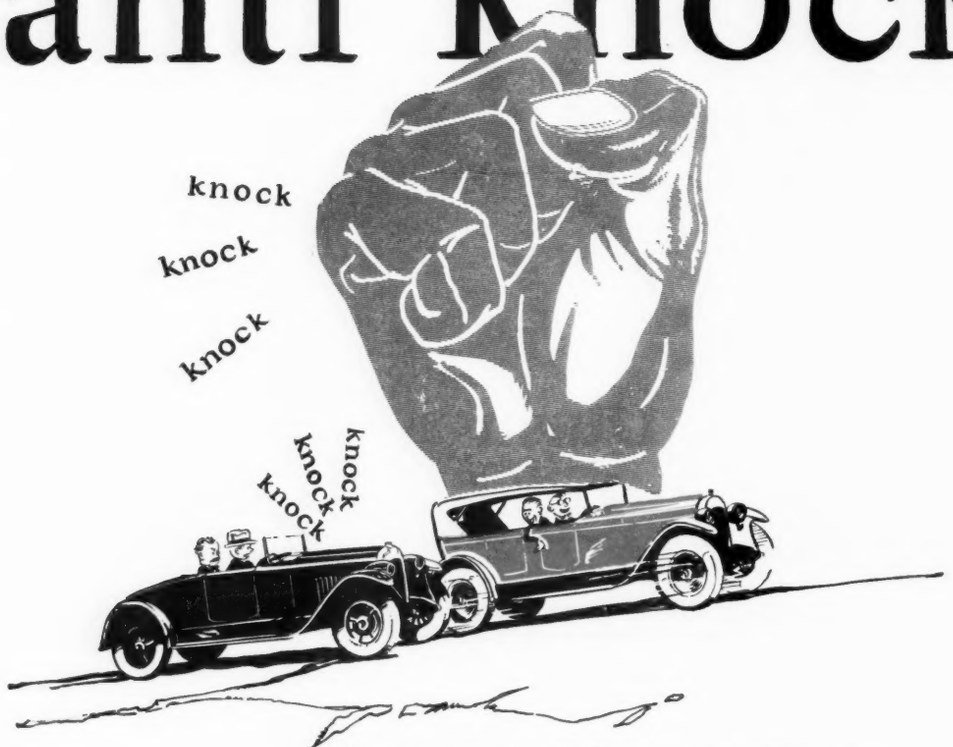
Write today for details, prices and discount.

DUNNING COMPRESSORS
Dunning Compressor Company
HOLMESBURG, PHILADELPHIA, PA.

JUNIOR AUTOMATIC

WHEN A FELLOW NEEDS

anti knock



dependable products . . . an independent source of supply

Imperial products have built a reputation with the independent jobber second to none.

And independent jobbers are coming to us in steadily increasing numbers as a dependable independent source of supply for their anti-knock gasolines.

Our two modern-to-the-minute refineries, located in fields famed for crude that makes a high quality anti-knock gasoline, are devoted to the manufacture of quality gasolines for the independent jobber.

We offer you a dependable source of supply—independent, non-competitive—with a service you will appreciate. Write for information.

A high grade line of furnace oils, low flash, good color, also distillates and gas oils are now ready for the winter trade.

IMPERIAL REFINING CO.
ARDMORE, OKLA.

KETTLE CREEK REFINING CO.
ELDORADO, ARKANSAS

All sales handled through our own sales division

IMPERIAL OIL MARKETING CO.

ATLAS LIFE BUILDING
TULSA, OKLAHOMA

Here & There

National Petroleum News

George H. Youker has been transferred from Haskell to Drumright, Okla., where he will be superintendent of plant No. 2 for the Sinclair Oil & Gas Co. L. M. Kelsey, formerly superintendent of the plant, has been transferred to Shidler, Okla., where he will have charge of the company's plant. Louis Snider has been placed in charge of plant No. 4 at Haskell, Okla.

* * *

Thomas McDonough, service station attendant at Martins Ferry, O., for the Standard Oil Co. of Ohio, married Miss Edna Frabell, of South Wheeling, W. Va., on Oct. 20. Following the marriage services, a wedding breakfast was served after which Mr. and Mrs. McDonough left for a trip to Washington, D. C. and other eastern points. They will make their home at Martins Ferry.

* * *

J. W. Greenleaf, formerly northeastern department manager at Boston for the Tide Water Oil Sales Corp., has been promoted to the position of assistant operating manager at the company's headquarters at 11 Broadway, New York. Previous to his departure from Boston, members of Mr. Greenleaf's department presented him with a traveling bag and wrist watch.

* * *

B. B. Cameron, president, MacMillan & Cameron, Inc., Wilmington, N. C., and A. Jewell, salesman for the company, attended the general tire convention at Akron, O. on Oct. 25. Mr. Cameron was one of the speakers at the meeting, his subject being one on methods of merchandising tires, reports Jane W. MacMillan, vice president.

* * *

C. P. Benneche, who was formerly a salesman with the Sinclair Refining Co., at East Paterson, N. J., bceame salesman on Oct. 11 for S. F. Bowser & Co., Inc., handling automotive and store trade in northern New Jersey, and operating out of the New York City offices of the company. The Bowser company headquarters are at Fort Wayne, Ind.

* * *

T. A. Stewart, salesman for the Emery Mfg. Co., Bradford, Pa., returned recently from New England points, where he reports business being good.

* * *

Louis Blaustein, president, American Oil Co., Baltimore, Md., is in California in connection with the producing end of its affiliated companies there.

* * *

W. R. Trolinger, who was formerly with The Texas Co. at St. Louis, Mo., has become clerk and cashier with that company at Tucson, Ariz.

Behold Mac and his bare skin! Pardon, we mean Mac and his bear skins! This is S. E. McFarren, general manager of the C. A. Pierce Oil Co., Akron, O., with trophies of his hunt in northern Quebec from which he recently returned. Mac with a Cleveland banker and Akron railroad official outfitted from Parent, Que., and traveled about 75 miles into the wilds. The three hunters got two big black bears and three moose. Mac is shown doing a strong man act with the bear skins. At his feet is the head of a moose whose antlers measured 55 inches from tip to tip. Fishing was also good, the Akron sportsman-oil man reports, trout biting fine and northern pike in weights from 10 to 17 pounds being plentiful. On the two-day return to the railroad several snowstorms were encountered.

W. H. Strobel, formerly with the Western Petroleum Co. and for the past three years representative of the Fred G. Clark Co. in Wisconsin, joined the Bodie-Hoover Petroleum Corp., Chicago, on Oct. 15. Mr. Strobel will represent the company in Wisconsin and the northwest.

* * *

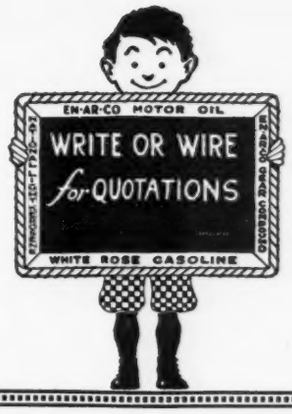
Milo Taxman, treasurer of the Atlas Petroleum Co., was in Chicago Oct. 16 to 18 after a business trip through the middle west. He returned to Kansas City Oct. 18. Mr. Taxman topped off the trip by attending a football game.

* * *

C. P. Strittmatter, who has been for seven years with the Tucson, Ariz. branch of The Texas Co., Houston, has severed his connection to conduct the Varsity Service Station, near the University of Arizona.

* * *

Lee Sonneborn, manager for the past three years of the Washington, D. C. branch of the American Oil Co., Baltimore, Md., has moved his family back to Baltimore, where Mr. Sonneborn will be connected with the company's main offices after Nov. 1.



The
NATIONAL REFINING COMPANY
PETROLEUM PRODUCTS

THREE MODERN REFINERIES:
Marietta, Ohio Refinery
operated on Pennsylvania Crude
Findlay, Ohio Refinery
operated on Ohio Crude
Coffeyville, Kansas Refinery
operated on Midcontinent Crude

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Cleveland, Ohio

Name.....

Address.....

AROMATIC EQUIVALENTS ARE THE BEST ANTI-KNOCKERS

PARCO PETROLEUM PRODUCTS

In general, gasolines are composed of four classes of hydrocarbons — Paraffins, Olefines, Naphthenes and Aromatics. Tests by such eminent and recognized authorities as Ricardo, Midgeley, Boyd, Egloff, Morrell and other motor fuel experts proved the anti-knock qualities of these hydrocarbons to be as follows:

1. *Paraffin Hydrocarbons—Notorious Knockers.*
2. *Olefine Hydrocarbons—Materially Better. Less Knocking.*
3. *Naphthene Hydrocarbons—Burn Slowly and Quietly.*
4. *AROMATIC Hydrocarbons—100% ANTI-KNOCK.*

A gasoline has anti-knock qualities in direct proportion to its content of aromatic hydrocarbons and the aromatic equivalent values of Olefine and Naphthene hydrocarbons. Laboratory tests can therefore determine the anti-knock or non-detonating qualities of gasoline.

Ask your supplier about the aromatic equivalent in the gasoline you are now buying. *Ask us about ours—then compare.*

PRODUCERS AND REFINERS CORPORATION

DENVER CHICAGO TULSA MEMPHIS SALT LAKE CITY OMAHA

Anti-Knock

PARCO

Gasoline

Our Modern Refinery at Parco was built to advantageously supply Northwest Jobbers.

Our Refining Facilities at West Tulsa and Blackwell mean Advantageous Freight Rates for Southwest and Central States Jobbers.

Oil Patents Issued Recently

Production

Apparatus for Adjusting and Holding Well-Drilling Bits.—James M. Shaffer, Fort Worth, Tex. Filed Aug. 7, 1925. No. 1,603,421.

Shaft Coupling.—Mahlon E. Layne, Houston, Tex., assignor to Layne & Bowler Corp., Los Angeles, Calif. Filed Jan. 31, 1925. No. 1,603,548.

Crown-Block Apparatus.—Lewis E. Zerbe, Moneta, and Edward Timbs, Los Angeles, Calif. assignors to Union Tool Co., Torrance, Calif. Filed Dec. 31, 1923. No. 1,603,571.

Pumping Mechanism.—David H. Hunter, Dallas, Tex., assignor to Sullivan Machinery Co. Filed July 3, 1923. No. 1,603,604.

Sand Reel.—Harold James Lockhart, Parkersburg, W. Va., assignor to The Parkersburg Rig & Reel Co., Parkersburg, W. Va. Filed May 7, 1925. No. 1,603,615.

Pump.—George E. McCracken, Taft, Calif. Filed Apr. 5, 1923. No. 1,603,619.

Valve.—Edwin C. Weisgerber, Long Beach, Calif. Filed Jan. 17, 1925. No. 1,603,654.

Gas Separator.—Carter A. Willis and Reuben N. Willis, Chanute, Kans. Filed Feb. 12, 1924. No. 1,603,656.

Oil-Well Pump.—Robert H. Folsom, Los Angeles, and Joseph W. Sheeley, Santa Monica Calif. Filed June 22, 1926. No. 1,603,675.

Tool Joint.—Sam Sorensen, Houston, Tex., assignor of one-half to Howard F. Smith, Houston, Tex. Filed Nov. 9, 1923. No. 1,603,721.

Traveling Block.—Cleveland J. Wilkinson, Ventura, Calif. Filed Dec. 12, 1922. No. 1,603,730.

Well-Cementing Device. — Alexander Boynton, San Antonio, Tex. Filed Dec. 21, 1925. No. 1,603,834.

Well-Cementing Device. — Alexander Boynton, San Antonio, Tex. Filed Dec. 21, 1925. No. 1,603,835.

Counterbalanced Pumping Jack.—John D. Brown, Breckenridge, Tex. Filed Mar. 29, 1924. No. 1,603,836.

Refining

Process of Distilling Petroleum.—Enoch O. Hicks, St. Joseph, Mo., assignor to The Universal Oil Products Co., Chicago, Ill. Filed Dec. 1, 1921.—Reissue.

Process of Treating Liquids.—Lyle Caldwell, Los Angeles, Calif., assignor to The Celite Co., Los Angeles, Calif. Filed Oct. 12, 1925. No. 1,603,314.

Method of Manufacturing Improved Bituminous Product.—Daniel B. W. Alexander, Springfield, Mass. Filed May 4, 1926. No. 1,603,502.

Means and Method for Removing Deposited Material from Cracking Apparatus.—Lyman C. Huff, Chicago, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed Jan. 26, 1923. No. 1,603,541.

Refining of Petroleum Oils and Distillates.—Paul McMichael, Flushing, N. Y., assignor to Hydrocarbon Refining Process Co. Inc., New York, N. Y. Filed Jan. 11, 1924. No. 1,603,701.

Reflux Column.—William W. Holland, Alton, Ill., assignor to Standard Oil Co., Whiting, Ind. Filed May 12, 1924. No. 1,603,772.

Miscellaneous

Mixer for Oils and Gases.—Joseph E. Fitzpatrick, Anaheim, Calif. Filed Apr. 24, 1922. No. 1,603,383.

Casing Shoe.—Donald D. Burch, El Dorado, Ark. Filed Feb. 25, 1926. No. 1,603,447.

Tank.—Andrew A. Kramer, Kansas City, Mo. Filed Mar. 9, 1925. No. 1,603,698.

Centrifuge Receptacle Provided with Drop Ridges.—Karl Petter Nilsson, Stockholm, Sweden, assignor to The de Laval Separator Co., New York, N. Y. Filed June 27, 1923. No. 1,603,707.

Bucket Box for Tank Wagons and the Like.—Edwin Frederick Engel, Chicago, Ill., assignor to Standard Oil Co., Whiting, Ind. Filed June 19, 1925. No. 1,603,753.

Liquid-Dispensing Pump.—Robert E. Wilson, Chicago, Ill., assignor to Standard Oil Co., Whiting, Ind. Filed July 19, 1923. No. 1,603,888.

A. D. MILLER SONS' CO.

(Millers Oil Refining Works)

Pittsburgh, Pa.

Send your orders for celebrated

"CASTOR-OI" MOTOR OIL

A Bean Castor and Pennsylvania Oil (blend). Wears longer, slicker, smoother than ordinary oils.

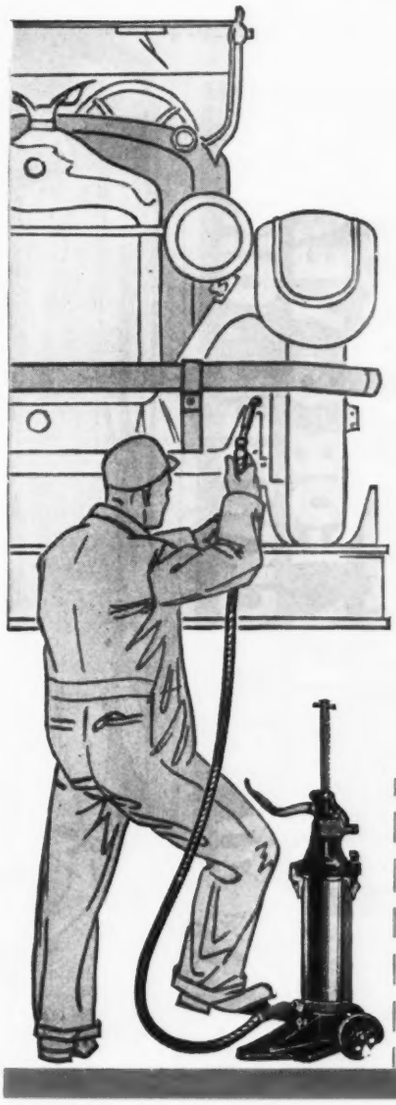
Shipped in tank cars, steel drums and cans. *Take the agency in your district.*

Cold...use any grease

BALCRANK

TRADE MARK REG. U.S. PAT. OFF.

HIGH PRESSURE LUBRICATOR



Cold weather won't kill your lubricating profits if you have a Balcrank Lubricator.

The Balcrank Lubricator gives just as quick and satisfactory service in winter as it does in summer. It handles efficiently any grade or kind of automotive grease regardless of climatic conditions.

Exceptional pressure is generated by simply stepping on the pedal. Hands are free to operate chucks. Requires only one man to operate. One shot cleans and lubricates the average bearing. Adaptors for various systems are changed in a jiffy. Special hose covering reduces hose breakage.

The Balcrank Lubricator is an attractive resale proposition for marketers because of its salability and liberal discounts.

Write at once for information.

THE CINCINNATI BALL CRANK COMPANY

CINCINNATI, OHIO

The Cincinnati Ball Crank Co.
4807 North St., Cincinnati, Ohio

Please send me complete information on your new Type "D" High Pressure Lubricator.

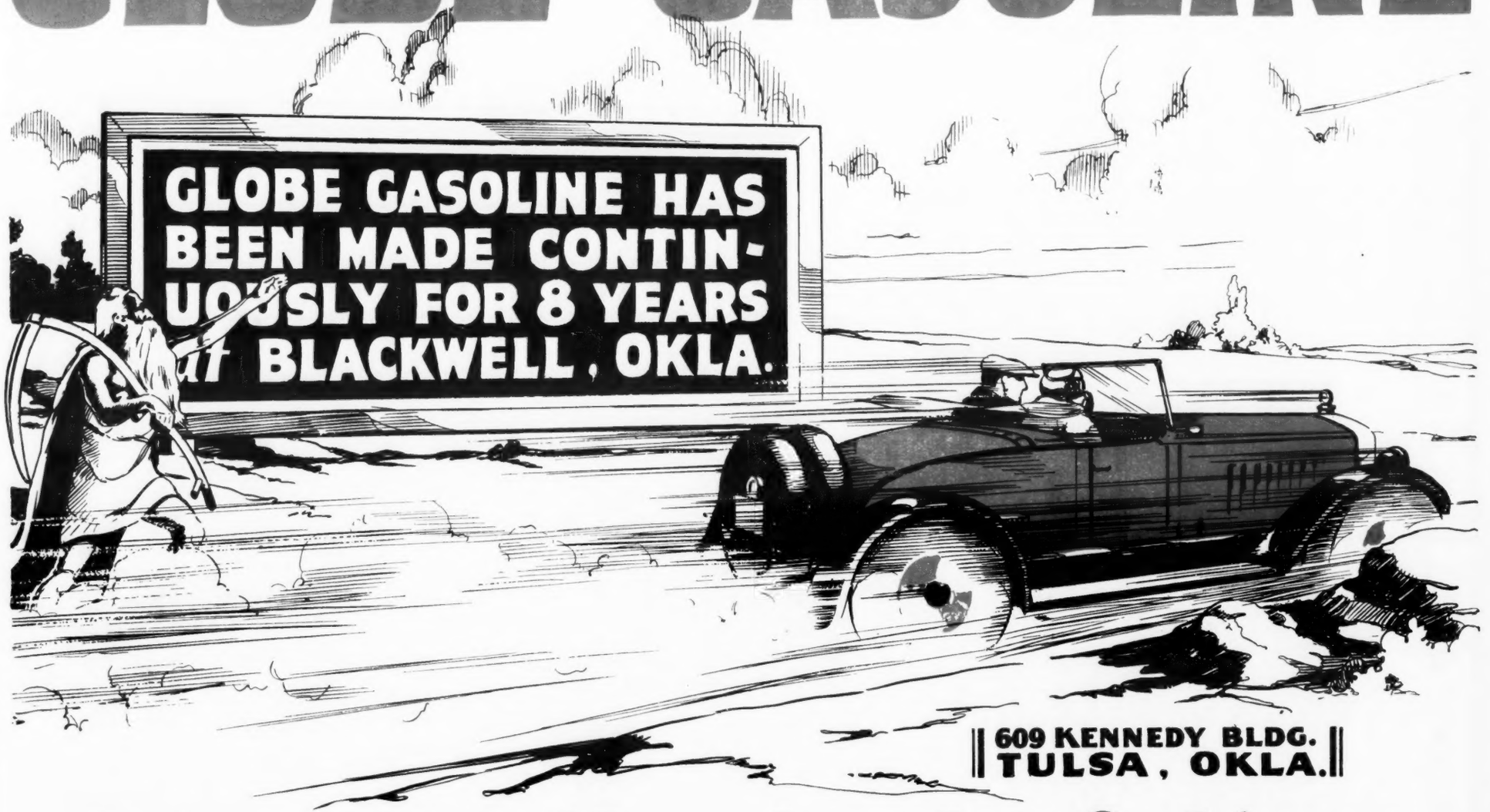
Name.....

Address.....

City and State.....

Business.....

GLOBE GASOLINE



..Stands the test of time..

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ON THE LAZY BENCH

National Petroleum News

New Uses for Drug Stores

A novel use for drug stores has been discovered in Jamaica. It is the custom there for negro mothers to choose the most complicated and high-sounding names for their children. Long Biblical names have been used so often that they are no longer desirable, and the natives are finding that the only way to achieve startling originality is to appropriate words from druggist's prescriptions or from the labels on the bottles on their shelves.

Accordingly one finds children not only Epaminondas or Gabriel, but also Epsom or Sulphuric.

A certain negro woman appeared one day before an Episcopal clergyman for the christening of her recently arrived twins.

"I want to call one Benzine and one Tataric," she said.

"But, my dear woman," objected the minister, "I cannot give them such awful names."

"Dat's what I'se wantin' to call dem, Sah."

"It is not fair to the children," said the clergyman, "I shall christen one John and the other James."

The mother's objections were overridden, and the children duly named John and James. But after the ceremony was over, the negress turned to the minister and said:

"All right, Boss, all right. But one o' dem kids is a gal."

—The Eagle.

◈ ◈ ◈

Some Score

Bill tells of a friend of his—beginner at golf—who, when asked how he came out on his first day on the links, replied that he made it in eighty.

"Eighty," ejaculated Bill, "that's really remarkable. Most old-timers would envy you that score. You'll surely be an enthusiast from now on."

"Yes," said the novice, condescendingly, "I'm going back tomorrow and try the second hole."

—The Eagle.

◈ ◈ ◈

Congratulations

Sweet Young Thing (coming in with attentive partner after a bridge party): "Oh, mother, I captured the booby."

Mother: "Well, well! Come here and kiss me, both of you."

—Loreco Diamond

◈ ◈ ◈

"I can't stand anything but bonded stuff," said the stenographer as she reached for another sheet of paper.

Pacific Gasoline Booster

Prompt Identification

"But I don't know you, madame," protested the paying teller to a woman who had presented a check.

The woman, instead of replying haughtily, "I do not wish your acquaintance, sir," merely gave him a glassy smile and said:

"Oh, yes you do. I don't need anyone to identify me. I'm the 'red-headed hen' next door to you, whose 'imps of boys' are always running across your garden. When you started down town this morning your wife said: 'Now, Henry, if you want a dinner fit to eat this evening you'll have to leave me a little money. I can't keep this house on Christian Science.' You have to go in the back way when the porch has been scrubbed—"

"Here's your money," interrupted the teller faintly."

—The Eagle.

◈ ◈ ◈

Putting One Over

The girl about to travel alone was warned not to talk to strange men. At the station, the conductor asked: "Where are you going?'

"To Detroit,' she answered, so he put her on the Detroit train.

As the train pulled out she looked back and said:

"Ha, ha, I fooled him that time. I'm going to Chicago."

—The Eagle.

◈ ◈ ◈

How It's Done

City Youth—What's that the calf is licking?"

Cow Farmer—That's rock salt, my boy.

City Youth—Gee whiz! I've often wondered how corned beef was made.

—Flash Points.

◈ ◈ ◈

Stude—"Say, gimme a ticket to Tulsa."

Agent—"Here ya are, change at Oklahoma City."

Stude—"No ya don't. I'll take the change now."

Standard Gasoline Booster

◈ ◈ ◈

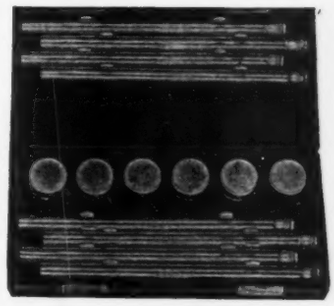
If the New Yorker who sued for $20,000 damages because someone called him a bootlegger, loses his suit upon defendant's proof that he is a bootlegger, his advertising will be worth $40,000.

—The Booster.

◈ ◈ ◈

Irritable Husband: "How can you expect to drive a nail into the wall with a hair brush? For goodness' sake, use your head."

—The Eagle.



A Pocket Sample Case

No. 135 L-U-C-E POCKET CASE is 10⅝"x5¼"x2", fitting conveniently into the side pocket of your coat. Covered with black seal grain, genuine cowhide, with two nickel plated side catches, it assures a favorable first impression. It contains eight 9" x½" bottles and seven ½ oz. grease jars in a compact, convenient manner. The lining is red plush. Complete with your name embossed in gold, *guaranteed* to please, only $6.50

Less 10% for cash.

Other Styles in our FREE Catalog

L-U-C-E

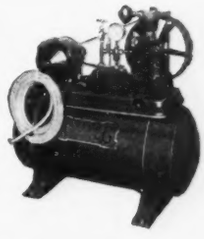
Builders of Sales Luggage

614 Delaware KANSAS CITY, Mo.

BULL DOG

Once a Kellogg Bull Dog sinks its teeth into a piece of work, it never lets go till the job is done. That's why average size filling stations everywhere are buying the Bull Dog.

Can you afford to be without one?



Self-cleaning check valve
Air cleaner and muffler
30 gallon tank
20 feet of hose
Automatic control

Completely equipped

$169.90

Kellogg Manufacturing Company

Rochester, N. Y.

oh Boy!

Watch my smoke Now!

Refinery - Tank Wagon Markets

National Petroleum News

Gasolines in Group 3 Market are Steady Though Tank Wagon Price is Cut

Staff Special
TULSA, Oct. 30

MORE export buying and continued hand-to-mouth domestic purchases kept Mid-Continent refinery markets stable this week although tank wagon prices of both gasoline and kerosene were reduced by the Standard Oil Co. of Indiana and other major companies.

The excitement which usually follows a tank wagon change was lacking. When the Standard of Indiana's reduction Tuesday became known there appeared to be more sighs of relief than of excitement. The reduction had been generally expected for some time and the trade had figured the reduction had already been discounted by refiners. That this was true was evidenced by the fact that gasolines failed to show more than slight recessions.

The Atlantic Refining Co. on Tuesday and Wednesday bought 2,000,000 gallons of 64-66, 375 end point gasoline for export, 1,000,000 gallons from Oklahoma refiners and 1,000,000 from north Texas refiners. The price was 10½ cents f. o. b. north Texas, and it was understood the shipper could move the goods either immediately or over a period.

This purchase coupled with those of the previous week, placed the higher gravity gasolines in a better position, and prices moved fractionally higher before the week ended. Domestic demand for both 64-66, and 60-62, 400 e. p. gasoline held up well. One large refiner who has been forced to buy a little 64-66, 375 e.p. to fill his orders early in the week was able to purchase at 10¾ cents a gallon in Oklahoma, but Saturday he was forced to pay 11 cents. He has been selling his goods on the spot market, meanwhile, for 11¼ cents.

Naphthas Near U. S. Motor Price

FEW plants have been making naphthas this year, and prices have remained close to U. S. Motor price. Raw naphthas have been sold for 9½ cents this week, but efforts to buy doctor test goods at less than 9⅝ cents have been fruitless. The lower gravity gasolines have been moving more slowly.

A few more plants in Oklahoma have started to make higher gravity gasoline at the expense of U. S. Motor. One large factor has expressed the opinion that any concerted buying of U. S. Motor by jobbers would find U. S. Motor relatively scarce.

There have been a few orders for 15 to 25 cars at a time for shipment over two weeks but these orders have been the exception. One refiner who a week ago said he had booked a little U. S. Motor at 9⅜ cents for shipment to begin the middle of this week, took a few more orders from brokers at that price but said Friday he had been so swamped with orders that he had to put his price back to 9½ cents.

An export order for 500,000 gallons of U. S. Motor was reported to have been placed with Louisiana refiners Friday, as well as 250,000 gallons of kerosene. The price of the U. S. Motor was said to be around 9¼ cents. The price of the kerosene was not divulged.

A few refiners in both Oklahoma and Texas sold some higher gravity gasolines early in the month for deferred shipment. With the export purchases the higher gravities became scarcer at refineries and prices were advanced. Marketers who had bought the goods, however, accepted orders at slightly under what refiners in many instances were quoting to the trade.

Natural Gasolines Stronger

AFTER showing only minor fluctuations for the past 10 days or two weeks, natural gasolines late this week began moving higher. Several factors are cited by manufacturers for this situation.

The New Orleans Refining Co., which is taking more than 1000 carloads a month has instructed shippers to have the November maximum requirements rolling before Nov. 20. This naturally will cut the shipping period down by 10 days, and one manufacturer said Friday he would have to do a little buying on the spot market.

Another large broker who buys the lower recovery grades of natural gasolines believed that October would be a slow month for naturals, consequently he did not buy for the entire period, but made purchases only when needed. This week he decided that November would be a better month, and that prices would be either steady or go higher, so he has been doing considerable buying.

There has been no distress material offered the past few days, and material which a week ago was available for the first half of November, has been placed under contract.

In Texas natural gasolines were extremely tight. One factor who moved considerable material east said that market was giving him more trouble than any other spot. He has had to move some material out of Oklahoma on a higher freight rate. One or two factors in Texas have bought material in Oklahoma to apply on their orders. It has been estimated that more than 50 per cent of the output in Texas for November already has been placed under contract.

Kerosene Demand Better

THE reduction of 1 cent in price of kerosene by the Standard of Indiana failed to affect refinery prices. The trade generally believes 41-43 water white kerosene has reached bottom at 6¾ cents a gallon, at least until the demand slumps. A better movement of kerosenes was reported from almost all areas. A few brokers were able to buy at 6¾ cents almost all week, but they said yesterday and today that considerably more shopping was required to get the lower prices. Refiners have been getting 7 cents from jobbing trade.

When the kerosene demand lagged a little two or three weeks ago one refiner switched to prime white distillate and has been getting 5⅝ to 5¾ cents for his material. The demand for 38-40 straw distillate, however, has been curtailed by mild weather. This naturally would be expected, however, since jobbers filled the tanks of their customers late in the summer.

Gas oil continued to be in demand this week at prices which have prevailed for the past month or so.

Fuel oil movement has increased. Stocks have been reduced but are still large. It is said a large part of the stored stocks is held for account of contract buyers.

Fuel Cars Scarce

FUEL prices have been steady almost all week. Dirty cars and fuel cars are becoming scarce. This fact may in-

(Continued on page 165)

Guaranteed
100% PURE
PENNSYLVANIA
OIL
TRADE MARK

BLENDED to *your* SPECIFICATIONS

from

450 Bright Stock (Sharples Process) and 100% Pennsylvania Crude Neutrals

Available for immediate shipment in tank cars, compartment tank cars, barrels, drums, or packed in your individual containers. For quotation, write to

The FREEDOM OIL Works Company, Freedom, Pa.

Refiners of Pennsylvania Grade Crude for 47 years.

Refineries at Freedom and Coraopolis

Freedom Quality Stocks
- 450 Bright Stock
- 600 Steam Refined
- 635 Steam Refined
- 650 Steam Refined

Freedom Filtered Neutrals

Freedom 300 Mineral Seal Oil made to Railroad Specifications

Freedom Filtered Burning Oils

FREEDOM

Refinery Markets on Light Oils and Lubricants

Pennsylvania, Oklahoma, Kansas, North and South Texas, Louisiana, Arkansas, California and New England

GASOLINE AND NAPHTHA

	Prices Nov. 1	Prices Oct. 25	Prices Oct. 18
PENNSYLVANIA			
52-54 Naphtha	11¾-12	11¾-12	12 -12¼
54-56 Naphtha	-12	12 -12¼	12¼-12½
58-60 Gasoline	12 -12¼	12 -12¼	12¼-12½
60-62 Straight-run gasoline	12½-13	13 -13¼	13 -13½
64-66 Straight-run gasoline	13½-14	13½-14	14 -14½
68-70 Straighr-run gas.350-360 E.P.	14½-15	14½-15	14¾-15
68-70 Straight-run gs.305-320 E.P.	18 -19	19 -20	19 -20
OKLAHOMA			
48-50 450 E. P. naphtha	9½- 9¾	9½- 9⅝	9½- 9¾
50-52 450 E. P. naphtha	9½- 9¾	9½- 9⅝	9½- 9¾
56-58 450 E. P. gasoline	- 9¼	9¼- 9½	- 9⅝
56-58 U. S. Motor gasoline	- 9⅜	9½- 9⅝	9⅝- 9¾
58-60 450 E. P. gasoline	9¼- 9⅜	9⅜- 9½	- 9⅝
58-60 U. S. Motor 437 E. P.	9½- 9¾	9⅝- 9¾	9¾-10
60-62 400 E. P. gasoline	10⅜-10½	-10½	10½-10¾
64-66 390 E. P. gasoline	-10⅝	10⅝-10¾	10¾-10⅞
64-66 375 E. P. gasoline	11 -11¼	10⅞-11	11 -11¼
68-70 350-360 E. P. gasoline	11½-11¾	11¼-11¾	11⅜-11⅝
64-66 437 E. P. blend	9¼- 9½	- 9½	9⅝- 9¾
KANSAS*			
58-60 U. S. Motor gasoline	9¾-10	9⅞-10⅛	10 -10⅛
*F. O. B. refinery Kansas destination.			
NORTH TEXAS			
48-50 450 E. P. naphtha	- 9½	- 9½	- 9¾
56-58 450 E. P. gasoline	9⅜- 9¼	- 9½	- 9½
58-60 450 E. P. gasoline	- 9¼	9⅜- 9⅝	- 9⅝
56-58 U. S. Motor gasoline	9¼- 9⅜	- 9⅝	9⅝- 9¾
58-60 U. S. Motor gasoline	9½- 9⅝	- 9¾	9¾-10
64-66 390 E. P. gasoline	-10½	10¾-10½	-10½
64-66 375 E. P. gasoline	-10¾	10⅝-10¾	10⅝-10¾
68-70 350-360 E. P. gasoline	-11½	11½-11¾	11⅜-11¾
NORTH LOUISIANA			
58-60 U. S. Motor 437 E. P.	9½- 9¾	-10	10 -10⅛
ARKANSAS			
56-58 450 E. P. gasoline	- 9½	- 9¾	- 9¾
58-60 450 E. P. gasoline	- 9⅝	- 9⅞	- 9⅞
58-60 U. S. Motor gasoline	9¾- 9⅞	9⅞-10	10 -10⅛
CALIFORNIA			
*54-58 U. S. Motor 437 E. P.	9 - 9½	9 - 9½	9 - 9½
*58-61 U. S. Motor, 437 E. P.	10½-10¾	10½-10¾	10½-10¾
*42-45 Engine distillate,445-480E.P.	7 - 7½	7 - 7½	7 - 7½
*2c tax to be added if used in state.			
NEW ENGLAND (F. O. B. Boston and Fall River)			
58-60 U. S. Motor gasoline	-12½	-12⅝	-12⅝

NATURAL GASOLINE

(Note: End point of all grades, not over 375° F.)

OKLAHOMA			
Grade AA, 80-87.9 375 E. P.	9¼- 9½	9 - 9¼	9 - 9¼
Grade A, 72-79.9 375 E. P.	9¼- 9½	9 - 9¼	9 - 9¼
Grade BB, 84-92, 375 E. P.	- 8¾	8½- 8¾	- 8¾
Grade B, 76-83.9, 375 E. P.	- 8¾	8½- 8¾	- 8¾
Grade C, 80-90, 375 E. P.	-*8⅝	8¼- 8½	- 8½
NORTH LOUISIANA			
*Grade Double A	9½- 9¾	- 9½	9½- 9¾
*Grade Double B	- 9¼	- 9¼	- 9¼
*Grade C	- 9	- 9	- 9
*F. O. B. Monroe District.			
NORTH TEXAS			
*Grade Double A	9¼- 9½	9¼- 9¼	9 - 9¼
*Grade A	9¼- 9½	9⅛- 9¼	9 - 9¼
*Grade Double B	8¾- 9	8½- 8¾	- 8¾
*Grade B	8¾- 9	8½- 8¾	- 8¾
*Grade C	8¾- 9	- 8½	- 8½
*F. O. B. Breckenridge.			
CALIFORNIA			
75-85, 375-390 E. P.	11½-12	11½-12	11½-12
PENNSYLVANIA			
68-70 Grav. 437 E. P.	12¾-13	12¾-13	13¼-13½
64-66 Grav. 437 E. P.	12¾-13	12¾-13	13½-14
60-62 Grav. 437 E. P.	12¾-13	12¾-13	13½-14
68-70 Grav. 420 E. P.	13 -13¼	13 -13½	13½-14

BURNING OILS

PENNSYLVANIA			
45 Water White Kerosene	8½- 8¾	- 9	9¼- 9½
46 Water White Kerosene	9 - 9¼	9¼- 9½	10 -10¼
47 Water White Kerosene	9¾-10	-10	10½-10¾
OKLAHOMA			
41-43 Water White Kerosene	6¾- 7	6¾- 7	6¾- 7
42-44 Water White Kerosene	7¼- 7½	7¼- 7½	7¼- 7½
KANSAS			
41-43 w. w. kerosene	7¼- 7½	7¾- 8	- 8
42-44 w. w. kerosene	- 8	8¼- 8½	- 8½
NORTH TEXAS			
40-42 Water White Kerosene	6½- 6¾	6½- 6¾	.....
41-43 Water White Kerosene	6¾- 7	6¾- 7	6¾- 7
NORTH LOUISIANA			
41-43 Water White Kerosene	7 - 7¼	- 7½	7½- 7¾
ARKANSAS			
41-43 Water White Kerosene	7 - 7¼	- 7¼	- 7½
*Quotations Only.			

CALIFORNIA	Prices Nov. 1	Prices Oct. 25	Prices Oct. 18
38-40 Water White Kerosene	6 - 6½	6½- 7	6½- 7
NEW ENGLAND			
**40-43 Water White Kerosene	-10¾	-11	-11

NEUTRAL OIL

PENNSYLVANIA (Viscosity at 70° F.)			
200 Vis. No. 3 Assoc. Filt.	28½-29	28½-29	28¼-29
180 Vis. No. 3 Assoc. Filt.	25½-26½	25½-26	26 -26½
150 Vis. No. 3 Assoc. Filt.	23 -24	23½-24	23½-24
(Non-Viscous)			
34 Grav. 350-360 Flash	7½- 8	7½- 8	7½- 8
36 Miners Neutrals 300-305 Flash	7 - 7½	7 - 7½	7½- 7¾
OKLAHOMA (Viscosity at 100° F.)			
100 Vis. No. 2 color	7 - 7½	7 - 7½	7 - 7½
150 Vis. No. 3 color	9 -10	9 -10	9¼-10
150 Vis. No. 4 color	- 9¾	- 9¾	- 9¾
180 Vis. No. 3 color	10 -11	10 -11	10 -11½
180 Vis. No. 4 color	10 -10½	10 -10½	10 -10½
180 Vis. No. 5 color	10 -10½	10 -10½	10 -10½
200 Vis. No. 3 color	10¾-11¾	10¾-11¾	10¾-12½
200 Vis. No. 4 color	-11½	-11½	-11½
200 Vis. No. 5 color	9¾-11¼	9¼-11¼	9¼-11¼
220 Vis. No. 3 color	12 -13½	12 -13½	12 -13½
220 Vis. No. 4 color	-13	-13	-13
220 Vis. No. 5 color	12 -12¾	12 -12¾	12 -12¾
240 Vis. No. 3 color	14 -15	14 -15	14 -15
240 Vis. No. 4 color	-14½	-14½	-14½
240 Vis. No. 5 color	13 -14	13 -14	13 -14
280 Vis. No. 3 color	16 -17	16 -17	16 -17
280 Vis. No. 4 color	-16½	-16½	-16½
280 Vis. No. 5 color	15 -16	15 -16	15 -16
300 Vis. No. 5-6 color	-17	-17	-17
GULF COASTAL (Viscosity at 100° F.; cold test 0)			
100 Vis. No. 2 Color Unfilt. Pale	8½- 9	8½- 9	8½- 9
200 Vis. No. 3 Color Unfilt. Pale	11 -12	11 -12	11 -12
300 Vis. No. 3 Color Unfilt. Pale	12 -13	12 -13	12 -13
500 Vis. No. 3½ Color Unfilt. Pale	14 -15	14 -15	14 -15
750 Vis. No. 4 Color Unfilt. Pale	17 -18	17 -18	17 -18
200 Vis. No. 5½ Color Red Oil	10 -10½	10 -10½	10 -10½
300 Vis. No. 5½ Color Red Oil	11½-12	11½-12	11½-12
500 Vis. No. 6 Color Red Oil	12½-13½	12½-13½	12½-13½
750 Vis. No. 6 Color Red Oil	16 -17	16 -17	16 -17
CALIFORNIA (Viscosity at 100° F.)			
100 Vis. No. 2 color	9½-10	9½-10	9½-10
100 Vis. No. 3 color	8 - 8½	8 - 8½	8 - 8½
200 Vis. No. 3 color	10 -10½	10 -10½	10 -10½
300 Vis. No. 3 color	11 -11½	11 -11½	11 -11½
450 Vis. No. 3½ color	13 -13½	13 -13½	13 -13½
550 Vis. No. 3½ color	15 -15½	15 -15½	15 -15½
600 Vis. No. 3½ color	15½-16	15½-16	15½-16
100 Vis. No. 5 color	7 - 7½	7 - 7½	7 - 7½
200 Vis. No. 5 color	9 - 9½	9 - 9½	9 - 9½
300 Vis. No. 5 color	9½-10	9½-10	9½-10
400 Vis. No. 6 color	11½-12	11½-12	11½-12
500 Vis. No. 6 color	12 -12½	12 -12½	12 -12½
600 Vis. No. 6 color	12½-13	12½-13	12½-13
700 Vis. No. 7 color	14½-15	14½-15	14½-15

CYLINDER STOCKS

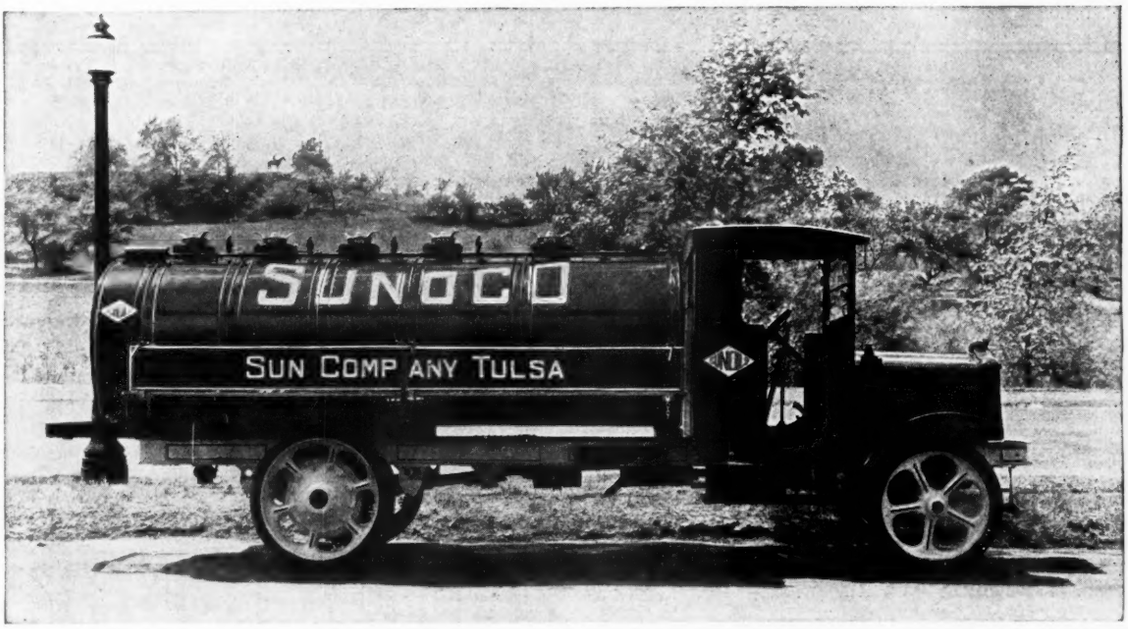
OKLAHOMA			
190-200 Vis. at 210° Bright Stock	31 -35	31 -35	31 -35
150-160 Vis. at 210° Bright Stock	27 -31	27 -31	27 -31
600 E Stock 140-150 Vis —210°	18 -20	18 -20	18 -20
600 Steam Refined Olive Green	8 -11	8 -11	8 -11
600 Steam Refined Dark Green	5½- 7½	5½- 7½	6 - 8
Black Oil	5 - 6	5 - 6	5 - 6
PENNSYLVANIA (1-inch Immersion Test)			
600 Steam Refined	11 -12	11½-12	11½-12
650 Steam Refined	15 -16	15 -16	-16
600 Flash	-21	-21	21 -21½
625 Flash	-31	-31	-31
600 Warren E	20 -20½	20 -20½	20½-21
600 Oil City E	18½-19½	18½-19	19½-20
600 D Filtered	25½-26½	25½-26½	26½-27
Cold Test Stocks (bright filtered)	40 -41	40½-41	-41
Cold Test Stock (dark filtered)	37 -39	38½-39	-39

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher.)

LONG RESIDUUM STOCKS

PENNSYLVANIA			
60-65 vis. @ 210, 440-450 flash No. 5½ color	-33	-33	-33
70-75 vis. @ 210, 450-455 flash No. 6 color	-34	-34	-34
80-85 vis. @ 210, 440-450 flash No. 7 color	-35	-35	-35
80-85 vis. @ 210, 450-460 flash No. 7-8 color	-36	-36	-36
80-85 vis. @ 210, 460-465 flash No. 7 color	36 -37	-37	-37
95-100 vis. @ 210, 490-495 flash No. 8 color	-38	-38	-38

**Only one refiner quoting.



Transported By Tank Truck— A Quarter of a Billion Barrels Annually

From peddling kerosene with mule drawn wagon tanks to the transportation of a quarter of a billion barrels of gasolene by tank truck annually—

From wagon tanks to an investment of one hundred million dollars in one hundred thousand tank trucks—

All in a decade and a half.

These facts, taken from recent statistics of the Oil & Gas Journal, measure the giant strides of the marketing division of the oil industry and emphasize the importance of transportation by tank truck.

A quarter of a billion barrels by tank truck annually. A tremendous volume. And most of it carried in Columbian Truck Tanks. The Columbians in active service have capacity enough to carry more than half of this great volume in a years time and yet average only two trips per day.

To technical engineers of the large National Companies, using thousands of truck tanks, and to seasoned operators of smaller fleets a comparison of its design, its monometallic construction and its record of performance quickly reveals the reason why the Columbian is dominant in the field of truck tanks.

COLUMBIAN STEEL TANK COMPANY

EST'D 1894

TANKS FOR THE WORLD

1405-1625 WEST 12TH STREET KANSAS CITY, MISSOURI

Refinery Markets on Wax and Heavy Oil Products

Pennsylvania, Oklahoma, Kansas, North and South Texas, Louisiana, Arkansas, California and New England

WAX

PENNSYLVANIA	Prices Nov. 1	Prices Oct. 25	Price Oct. 18
	(Per Pound, New York)		
122-124 White Crude Scale	– 5	– 5	5 – 5⅛
124-126 White Crude Scale.	– 5⅛	– 5⅛	5⅛– 5¼
OKLAHOMA			
124-126 White Crude Scale.	4¼– 4¾	4½– 4¾	4⅝ – 4¾
CALIFORNIA			
White Crude Scale.....	6 – 7	6 – 7	6 – 7

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil.....	6¼– 6¾	6⅜– 6⅝	6⅜– 6⅝
30-34 Fuel Oil.....	6¼– 6⅜	– 6	5¾– 6
28-30 Fuel Oil.....	6¼– 6⅜	– 6	5¾– 6
OKLAHOMA			
38-40 Straw distillate.....	5⅜– 5⅝	5¾– 5⅝	5⅜– 5⅞
36-38 Straw distillate.....	5¼– 5⅜	5¼– 5⅜	5⅜– 5⅜
32-36 Gas oil cracked (Gal.)	4⅛– 4¼	4⅛– 4¼	4⅛– 4¼
32-36 uncracked Gas oil,(Gal.)	4¼– 4⅜	4¼– 4⅜	4¼– 4⅜
28-30 Fuel oil (Bbl.).....	1.52½–1.57½	1.52½–1.57½	1.55 –1.60
14-16 Fuel oil (Bbl.).....	1.20 –1.25	1.20 –1.25	1.22½–1.25
16-18 Fuel oil (Bbl.).....	1.25 –1.27½	1.25 –1.27½	1.25 –1.27½
18-22 Fuel oil (Bbl.).....	1.25 –1.30	1.25 –1.30	1.25 –1.30
22-26 Fuel oil (Bbl.).....	1.30 –1.35	1.30 –1.35	1.30 –1.35
24-26 Fuel oil (Bbl.).....	1.35 –1.40	1.35 –1.40	1.35 –1.40
26-28 Fuel oil (Bbl.).....	1.40 –1.50	1.40 –1.50	1.40 –1.50
KANSAS*			
38-40 straw distillate.....	– 6	– 6	5⅞– 6
36-38 straw distillate.....	5¾– 5⅞	5¾– 5⅞	5¾– 5⅞
32-36 Gas Oil.....	– 4½	– 4½	4½– 4¾
18-22 Fuel Oil.....	1.35 –1.40	1.35 –1.40	1.35 –1.40
24-26 Fuel Oil.....	1.50 –1.60	1.50 –1.60	1.50 –1.60
*F. O. B. refinery, Kansas destination.			
NORTH TEXAS			
38-40 Straw Distillate.....	5¼– 5½	5¼– 5½	5¼– 5½
32-36 Gas Oil (Gal.) cracked	4 – 4⅛	4 – 4⅛	4 – 4⅛
32-36 uncracked gas oil....	4⅛– 4¼	– 4¼	4⅛– 4¼
24-26 Fuel per (Bbl.).....	1.55 –1.60	1.50–1.55	1.47½–1.50
GULF COASTAL			
Fuel.....	1.55 –1.60	1.55 –1.60	1.55 –1.60
Gas Oil.....	5¼– 5½	5¼– 5½	5½– 5⅝

NORTH LOUISIANA	Prices Nov. 1	Prices Oct. 25	Prices Oct. 18
32-36 Gas oil, cracked(Gal.)	4 – 4¼	4 – 4¼	4⅛– 4⅜
32-36 Gas oil,uncracked(Gal.)	4¼– 4½	4⅜– 4½	4⅜– 4½
16-20 Fuel Oil (Bbl.).....	1.20 –1.25	1.20 –1.25	1.20 –1.30
ARKANSAS			
30-34 Gas oil.....	4 – 4¼	4 – 4¼	4 – 4¼
32-36 Gas oil.....	4¼– 4½	4¼– 4½	4¼– 4½
Smackover Crude Fuel....	1.27½–1.30	1.27½–1.30	1.27½–1.30
Road oil.....	1.26 –1.30	1.26 –1.30	1.26 –1.30
CALIFORNIA*			
14-18 Fuel Oil (Bbl.).....	85 –1.00	85 –1.00	85 –1.00
14-18 Bunker Oil (Bbl.)...	85 –1.00	85 –1.00	85 –1.00
30-34 Gas Oil (Bbl.).....	1.30 –1.35	–1.40	1.00 –1.15
27 + Diesel Oil (Bbl.)....	–1.15	–1.15	1.00 –1.15
*(San Joaquin Valley, San Fransciso 4c per bbl. more.)			
NEW ENGLAND			
	(F. O. B. Boston and Fall River)		
30-32 Gas Oil (Gal.).....	– 6⅛	– 6	– 6⅛
Fuel Oil (Bunker C) Bbl..	–1.77	–1.73	–1.75

PETROLATUMS

PENNSYLVANIA			
Snow White.....	8½– 9	8½– 9	8½– 9
Lily White.....	7½– 8	7½– 8	7½– 8
Cream White.....	– 6½	– 6½	– 6½
Light Amber.....	– 3½	– 3½	– 3½
Amber.....	3¼– 3½	3¼– 3½	3¼– 3½
Red.....	– 3	– 3	– 3
Green —5.....	1¾– 2	1¾– 2	1¾– 2

PETROLEUM COKE

OKLAHOMA

(Per ton in car lots)

Lump.....	85–86	85–86	85–86
Breeze.....	2–2.25	2–2.25	2–2.25
Still Run.....	3.25–3.50	3.25–3.50	3.25–3.50

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

(Continued from page 161)

fluence the price. One refinery sales-manager said he would not be able to book a quantity order at present because he did not know where he could get the cars to ship the oil in.

One large refiner who does not have much fuel oil for sale is known to have leased all his cars to another refiner for the year. The lessee will use the cars to bring crude oil from the Panhandle and other fields into his refinery. Other refiners are using some of their own cars for the same purpose.

Several inquiries for material for shipment over November have been received in the Mid-Continent, but contracts are still under what they were at this time last year. A few sales have been made for over the month but they, too, are not numerous.

The Missouri, Kansas & Texas railroad has contracted with a Wichita Falls refiner for approximately 15,000 barrels of fuel oil a month over six months. The price is based at $1.55 a barrel and varies 70 per cent of crude price changes. This sale has made the Texas market considerably tighter, since other rail and industrial users have been in the market for their monthly requirements. Some spot sales of 24-26 gravity fuel oil have been made at $1.60 a barrel.

Missouri Jobbers To Seek 3% Shrinkage Allowance

TULSA, Nov. 1.—A shrinkage allowance of 3 per cent on gasoline exempt from state tax will be sought by the Missouri Oil Men's Association at the next session of the Missouri legislature, it is announced by George S. Allee, president. At present an allowance of 1 per cent is allowed when gasoline taxes are paid by jobbers on receipt of the material or the jobber may elect to pay the tax on the actual gallonage sold at time of sale.

It is expected that the next legislature will make it compulsory to pay taxes on receipt of the gasoline to simplify collection. Mr. Allee is asking Missouri jobbers to give him concrete reports on shrinkage between tank car and automobile tanks.

California Markets

LOS ANGELES, Oct. 30.—California markets continue rather firm in the face of a slightly weaker tone in the Mid-Continent.

Natural gasoline continues firm with increased demand on account of its use in blending the "winter" gasoline now marketed by most of the larger companies on the west coast. The Shell Co. is now marketing a quick starting gasoline, advertised as 61 gravity. The Standard Oil Co. and the California Petroleum Corp. also sell a winter gasoline, around 58 to 60 gravity. From 20 to 25 per cent of this gasoline is natural gasoline, a blended product. Natural gasoline is selling at 11 to 11½ cents.

U. S. Motor gasoline is fairly strong at 9 to 9½ cents for export, with export movement holding up well. Kerosene quotations are not changed, although the market is slightly stronger on the approach of winter. Cargo lots can be bought at 6 cents per gallon and in a few instances tanker loads can be secured at the same price although the tank car load price is quoted at 6½ cents.

There is no change in fuel oil prices with quotations ranging from 85 cents to $1 per barrel, either in tank cars or for export, although it was reported this week that one cargo of fuel oil was quoted at 82½ cents per barrel, f. o. b. Los Angeles Harbor. Fuel oil in San Francisco area is 4 cents higher.

Benzol is Less Firm

NEW YORK, Nov. 1.—Consumption of motor benzol appears to be declining but the leading marketers are still asking 24 cents a gallon, in tank cars at the ovens. The expected reductions in prices have failed to materialize but the market is not as firm as it was a short time ago. Production is still heavy, and supplies appear to be accumulating.

Market Section

Gasoline and Kerosene are Steady In Chicago Resale Market

Staff Special

CHICAGO, Oct. 30

GASOLINE and kerosene weathered a 1-cent tank wagon price reduction in the Standard Oil Co. of Indiana territory this week without any material effect on price or demand in the Chicago resale market. After the market had stood still all day Oct. 26 when tank wagon prices were cut, demand recovered and by today refiners and marketers reported as many sales as a week ago. Prices generally were at the same level today as for the first of the week.

The reduction had been discounted, the trade reported. U. S. Motor gasoline sold for 9¾ cents Monday with a few cars moving at 9⅝ cents. Tuesday quotations ranged from 9⅝ to 10 cents with no buying or no inquiries being put out. The majority of sellers were holding at 9¾ cents over the remainder of the week, while those selling at lower prices gradually brought their price to the 9¾-cent level.

There has been no change in jobber buying policy, however, since the reduction. Sales were made for small quantities, rush shipment. Two refiners today reported their gasoline sales this week were as large as last week. A marketer said he was selling more kerosene late this week than gasoline.

A better kerosene demand was noted Monday. No sales were reported on Tuesday, but demand picked up Wednesday and Thursday and continued good over the rest of the week. The price on 41-43 water white kerosene Monday was 6⅞ to 7 cents, and quotations on Tuesday were from 6¾ to 7 cents. Sales were reported later in the week at 6¾ and 7 cents, but by today most sellers were getting 7 cents and only a few cars moved at the lower price.

High test gasoline demand continued to retain its strength in the market. The trade reported that the reduction had no effect on higher gravities. Demand was steady and the price firm at 11 to 11⅛ cents. A few sales were reported through the week at 10⅞ and also at 11¼ cents.

While gasoline and kerosene demand was on the up-grade, burning oil demand remained quiet. Reports from the trade indicate that cooler weather is needed to stimulate buying.

Various refiners and marketers reported their November fuel oil contract business was not so large as in November, 1925.

Prices of burning oils fell fractionally during the week. The 38-40 straw distillate eased off from 5¾ to 6 cents early in the week to 5⅝ to 5¾ cents today, with some sales of prime white reported at 6 cents. The 36-38 straw distillate went from 5½ to 5⅝ cents to 5⅜ to 5⅝ cents today. Dark gas oil was unchanged at 4⅛ to 4¼ cents and straw color unchanged at 4⅜ to 4½ cents.

Fuel oils were down with 18-22 fuel selling at $1.25 to $1.30 today as against $1.27½ to $1.30 up to Friday. The 24-26 fuel was $1.35 to $1.40 on Monday but on Tuesday it was selling at $1.32½ to $1.35. Smackover sold all week at $1.25 to $1.30 with most sellers holding for $1.27½ and $1.30.

Occasional rains or snow flurries have been predicted for the Chicago forecast next week. Temperatures will be somewhat below normal at beginning of the week, rising later, and falling again at the end of the week. The average, however, is expected to be above the seasonal normal.

Correction

Due to error in telegraphic transmission, prices of North Texas grade B and BB natural gasolines in the refinery market tables of Oct. 6 issue of National Petroleum News, in the Oct. 4 column, and in subsequent issues showing the Oct. 4 column of prices, were shown at 9 to 9¼c. Prices on Oct. 4 on these two grades should have been 9¼ cents flat.

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Week's Price Changes Tank Wagon Markets

Gasoline Changes

Standard of Nebraska—T.w. and s.s. prices gasoline reduced 1 cent through Nebraska except at points where price was below normal, **Oct. 26.** Norfolk was not included in reduction.

Continental Oil—T.w. and s.s. prices gasoline reduced 1 cent generally in Colorado, Wyoming and Montana, and 1 to 2 cents in New Mexico, **Oct. 27.** Albuquerque was reduced 1½ cents.

Magnolia Petroleum—T.w. and s.s prices gasoline reduced 1 cent, Oklahoma, except at points where prices have been below normal, **Oct. 27.** T.w. and s.s. prices gasoline reduced 1 cent generally, Arkansas, **Oct. 20.**

Prices of 18 cents gasoline on tank wagon and 21 cents on service station at Tulsa since Oct. 2 have been in error. Prices at Tulsa have been 20 cents and 23 cents respectively since July 24, and were reduced 1 cent on Oct. 27 to 19 cents and 22 cents.

Kerosene Changes

Standard of Nebraska—Kerosene reduced 1 cent, through Nebraska, **Oct. 26.**

Continental Oil—Kerosene reduced 1 cent generally, Colorado, Wyoming and Montana, **Oct. 27.**

Gasoline Prices to Jobbers Lower in East

NEW YORK, Nov. 1.—Atlantic seaboard bulk gasoline prices were a trifle lower last week. California U. S. Motor can now be laid down here at 11¼ cents a gallon in cargo lots, and local refiners are freely offering at 11¾ cents a gallon, in bulk, at the refineries and 12¾ cents a gallon in tank cars delivered to the local trade.

High marine rates from the Pacific Coast, have tended to offset a break at the eastern terminals. Local markets have to pay approximately 2¼ cents a gallon to bring the gasoline around from the coast. Jobbers are holding off and stocks are accumulating. Upstate tank wagon markets are weakening due to this influx of gasoline and the demand from the smaller buyers has dwindled to hand-to-mouth proportions.

No large domestic sales were reported during the week. The big domestic buyers are keeping in close touch with the market but expressed the belief that the bottom had not yet been reached. The trade has again been rife with rumors of an impending slash in New York and New Jersey gasoline tank wagon prices, which has tended to further depress the market.

TULSA, Nov. 1.—Downs and Boudreau, petroleum marketers of Tulsa, opened a Chicago office on Nov. 1. H. P. Downs will be in charge. The address is 919 Blum building.

Tank Wagon, Service Station Markets for Gasoline and Kerosene In United States Territories and Canada

These Prices in Effect Nov. 1, 1926

S. O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	18	0	18	*	16
Newark, N. J.	18	0	18	20	16
Annapolis, Md.	18	2	20	*	16
Baltimore, Md.	18	2	20	23	16
Cumberland, Md.	18	2	20	23	16
Washington, D. C.	18	2	20	23	16
Danville, Va.	18	4½	22.5	*	16
Norfolk, Va.	18	4½	22.5	25.5	16
Richmond, Va.	18	4½	22.5	25.5	16
Roanoke, Va.	18	4½	22.5	25.5	16
Petersburg, Va.	18	4½	22.5	*	16
Williamsburg, Va.	18	4½	22.5	*	16
Charleston, W. Va.	18	3½	21.5	24.5	16
Clarksburg, W. Va.	18	3½	21.5	24.5	16
Keyser, W. Va.	18	3½	21.5	*	16
Parkersburg, W. Va.	18	3½	21.5	24.5	16
Wheeling, W. Va.	18	3½	21.5	24.5	16
Charlotte, N. C.	19	4	23	26	16
Hickory, N. C.	19	4	23	*	16
High Point, N. C.	19	4	23	*	16
Mt. Airy, N. C.	19	4	23	*	16
Salisbury, N. C.	19	4	23	*	16
Charleston, S. C.	19	5	24	27	16
Columbia, S. C.	19	5	24	27	16

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

*New York City	21	0	21	25	18
Albany, N. Y.	17	0	17	19	18
Buffalo, N. Y.	18	0	●18	21	18
Rochester, N. Y.	20	0	20	24	16
Syracuse, N. Y.	17	0	17	19	18
Boston, Mass.	19	0	19	21	18
Augusta, Me.	21	3	24	26	18
Manchester, N. H.	21	2	23	25	18
Burlington, Vt.	21	2	23	25	18

*In steel barrels.

ATLANTIC REFINING

Pittsburgh, Pa.	19	*	19	*24	17
Philadelphia, Pa.	19	*	19	*24	17
Allentown, Pa.	19	*	19	*24	17
Erie, Pa.	†18	*	18	*23	15
Scranton, Pa.	19	*	19	*24	17
Altoona, Pa.	19	*	19	*24	17
Dover, Del.	19	2	21	24	17
Wilmington, Del.	19	2	21	24	17
Providence, R. I.	19	1	20	22	18
Boston, Mass.	19	0	19	21	18
Springfield, Mass.	19	0	19	21	18
Worcester, Mass.	19	0	19	21	18
Hartford, Conn.	19	2	21	24	17
New Haven, Conn.	19	2	21	24	18

*2-cent state tax is collected by retail dealer and paid by him directly to state.

†Most sales are being made at 17c at tank-wagon but 18c is nominal price.

S. O. KENTUCKY

Lexington, Ky.	18	5	23	26	17
Louisville, Ky.	17	5	22	25	17
Covington, Ky.	18	5	23	26	17
Clarksdale, Miss.	18	4	22	25	14.5
Jackson, Miss.	18	4	22	25	15.5
Natchez, Miss.	17.5	4	21.5	24.5	15
Vicksburg, Miss.	17.5	4	21.5	24.5	15
Birmingham, Ala.	19	2	21	24	17.5
Mobile, Ala.	18	2	20	23	16
Montgomery, Ala*	20	2	22	25	18.5
Atlanta, Ga.	†20	3½	24	27	18
Augusta, Ga.	†20	3½	24	27	18
Macon, Ga.	†20	3½	24	27	18
Savannah, Ga.	†18	3½	22	24	16
Jacksonville, Fla.	18	4	22	25	16
Miami, Fla.	20	4	24	27	17.5
Tampa, Fla.	18	4	22	25	16
Pensacola, Fla.	18	4	22	25	16.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

†Georgia has ½ cent per gal. inspection fee on gasoline which is deducted as well as the state gasoline road tax of 3½ cents, to get the actual net tank wagon market to dealer.

S. O. INDIANA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Chicago, Ill.	†18	0	†18	20	13.5
Decatur, Ill.	18.2	0	18.2	20.2	14
E. St. Louis, Ill.	17.1	0	17.1	19.35	13.1
Joliet, Ill.	18.4	0	18.4	20.4	14.2
Peoria, Ill.	18.2	0	18.2	20.2	14
Quincy, Ill.	18.2	0	18.2	20.2	13.8
Indianapolis, Ind.	18.2	3	21.2	23.2	14.2
Evansville, Ind.	18	3	21	23	14
South Bend, Ind.	18.4	3	21.4	23.4	14.4
Detroit, Mich.	18	2	20.8	22.8	14.7
Grand Rapids, Mich.	18.7	2	20.7	22.7	14.6
Saginaw, Mich.	18.9	2	20.9	22.9	14.8
Green Bay, Wis.	17.6	2	19.6	21.6	14.3
Madison, Wis.	18.3	2	20.3	22.3	14
Milwaukee, Wis.	18.1	2	20.1	22.1	13.8
La Crosse, Wis.	19.2	2	21.2	23.2	14.9
Minneapolis, Minn.	19.2	2	21.2	23.2	15.1
Duluth, Minn.	19.5	2	21.5	23.5	15.1
Mankato, Minn.	19 1	2	21.1	23.1	14.9
Des Moines, Iowa	18.5	2	20.5	22.5	14.4
Davenport, Iowa	18.5	2	20.5	22.5	14.4
Sioux City, owa	16.9	2	18.9	20.9	14
Mason City, Ia.	18.5	2	20.5	22.5	14.4
St. Louis, Mo.	*17.6	2	19.6	21.9	13.5
Kansas City, Mo.	††18.9	2	20.9	22.9	12.8
St. Joseph, Mo.	††18.5	2	20.5	22.5	13.4
Fargo, N. D.	20.9	2	22.9	24.9	17.1
Grand Forks, N. D.	19	2	21	23	17.4
Minot, N. D.	20.9	2	22.9	24.9	17.1
Pierre, S. D.	19.5	3	22.5	24.5	15.6
Huron, S. D.	19.5	3	22.5	24.5	15.6
Wichita, Kans.	**16.8	2	18.8	20.8	13.3
Bartlesville, Okla.	16.8	3	19.8	21.8	13.3

†Dumps of 100 or more gallons at 17c per gallon.
*Includes city tax of ½c.
††Includes city tax of 1c.
**Dumps of 50 gallons or more in Kansas, 1c discount per gallon.

S. O. NEBRASKA

Crawford, Neb.	19	2	21	*	14.75
Omaha, Neb.	18.25	2	20.25	22.25	14
McCook	19.75	2	21.75	23.75	15.5
Norfolk	17	2	19	21	14.5
North Platte	19.75	2	21.75	23.75	15.25
Scottsbluff	19.25	2	21.25	23.25	14.75

*Standard has no service station here.

CONTINENTAL OIL

Denver, Colo.	19	2	21	21	16
Pueblo, Colo.	19	2	21	23	16
Grand Junction, Colo.	23	2	25	27	20
Casper, Wyo.	19	2½	21.5	23.5	14.5
Cheyenne, Wyo.	20	2½	22.5	24.5	16
Butte, Mont.	21	2	23	23	19.5
Helena, Mont.	23	2	25	27	19.5
Salt Lake City, Utah	20.5	3½	24	26	18
Boise, Ida.	22	3	25	27	20
Twin Falls, Ida.	22	3	25	27	20
Albuquerque, N. M.	24	3	27	27	18.5

S. O. CALIFORNIA

Phoenix, Ariz.	19	3	22	25	21.5
Los Angeles, Cal.	11.5	2	13.5	16.5	15.5
Fresno, Cal.	13.5	2	15.5	18.5	17.5
San Francisco, Cal.	13	2	15	18	15.5
Reno, Nev.	16.5	4	20.5	23.5	19
Portland, Ore.	13	3	16	19	16.5
Seattle, Wash.	13	2	15	18	16.5
Spokane, Wash.	17	2	19	22	20.5
Tacoma, Wash.	13	2	15	18	16.5

S. O. LOUISIANA

Little Rock, Ark.	17	4	21	24	16
Alexandria, La.	17	2	19	22	17
Baton Rouge, La.	16	2	18	21	15.5
Lake Charles, La.	17.5	2	19.5	22.5	17
New Orleans, La.	*16.5	2	18.5	21.5	16
Shreveport, La.	16	2	18	21	16
Lafayette, La.	17	2	19	22	16.5
Bristol, Tenn.	20	3	23	26	17.5
Chattanooga, Tenn.	19.5	3	22.5	25.5	17.5
Knoxville, Tenn.	19.5	3	22.5	25.5	18
Nashville, Tenn.	18	3	21	24	18
Memphis, Tenn.	17	3	20	23	17

*Includes 1c city tax on gasoline and kerosene.

S. O. OHIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
All Ohio points	20	2	22	24	17

MAGNOLIA PETROLEUM

Muskogee, Okla.	16	3	19	22	13
Oklahoma City	15	3	18	21	13
Tulsa, Okla	16	3	19	22	13
Fort Smith, Ark.	17	4	21	24	14.5
Little Rock, Ark.	17	4	21	24	14.5
Texarkana, Ark.	20	4	*24	*24	15
Dallas, Tex.	16	1	**17	17	15
El Paso, Tex.	20	1	**21	21	15
Fort Worth, Tex.	16	1	**17	17	15
Houston, Tex.	20	1	**21	21	15
San Antonio, Tex.	18	1	**19	19	15

*Within city of Texarkana, Ark., the state tax on gasoline is 1c per gal. conforming with the Texas state tax. In Texarkana district outside of the city the 4c state tax applies.

**Magnolia is maintaining only one price schedule in Texas—its retail schedule. This is in keeping with its contract, effective May 5, which allows the dealer 3c off the retail price.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.& P Naphtha	Cleaner Naphtha
Chicago	21	23	21
Detroit	22.2	24.7	22.7
Kansas City	21.2	23.2	21.2
Milwaukee	21.2	*25.7	*23.7
Minneapolis	*24.5	*27	*25
St. Louis	20.4	22.9	22.2
New York	...	22	....

*Includes 2c state tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Toronto	24.5	3	27.4	31	24
Ottawa	24.5	3	27.5	31	24
Cochrane	29.5	3	32.5	38	29
Ft. William	26.5	3	28.5	34	26.5

MANITOBA

Winnipeg	27.5	3	30.5	34	26.5

SASKATCHEWAN

Regina	30.5	0	30.5	35	29.5

ALBERTA

Edmonton	27.5	2	31.5	35	28.5
Calgary	27.5	2	29.5	33	26.5

BRITISH COLUMBIA

Vancouver	21	3	24	28	23

QUEBEC

Montreal	24.5	3	27.5	31	24
Quebec City	26.5	3	29.5	33	26
Three Rivers	26.5	3	29.5	33	26

NEW BRUNSWICK

St. John	27.5	3	30.5	34	27
Moncton	27.5	3	30.5	34	27.5

NOVA SCOTIA

Halifax	27.5	3	30.5	34	27
Sydney	29.5	3	32.5	35	27.5

PRINCE EDWARD ISLAND

Charlottetown	27.5	3	30.5	34	27

Note: In districts surrounding these points 1c additional is added to city price.

Market Section

Gasoline Export Prices Steadily Decline Despite Better Demand

By Special Correspondent
NEW YORK, Nov. 1

ALTHOUGH export demand for gasoline was a shade more active last week, prices were lower at both the Gulf and New York. There were two inquiries for bulk cargoes of gasoline and kerosene in the market but only one confirmed sale was reported. One of the big Independent refiners reported the sales of two cargoes of Panuco crude oil, 55,000 barrels each, at $1.20 a barrel f.o.b. Tampico, taxes to be added but it was persistently rumored that this business had been done at $1.15 a barrel.

Kerosene was barely steady. Foreign buyers are operating hand-to-mouth. Lubricants remained soft and quiet. Export demand for the waxes was disappointing. Bunker and Diesel oils were quiet. Gas oil was a trifle softer.

Export Gasoline—New York

One of the leading Independent refiners sold 30,000 cases of U. S. Motor and 64-66 gravity 375 e.p. gasoline for November shipment to Australasia. The prices were not disclosed. On Thursday the Standard Oil Co. of New Jersey reduced the price of cased gasoline ¼ cent a gallon. A large Independent refiner was working on an inquiry from France for 45,000 barrels of prime and water white kerosene along with U. S. Motor and 64-66 gravity gasoline for November shipment. It is expected that this will be closed early this week.

U. S. Motor was generally quoted at 12 cents a gallon but there were liberal offerings at 11¾ cents a gallon, at the refineries but buyers failed to show much interest even at the inside price.

Export Gasoline—Gulf Ports

Export gasoline demand has shown a slight improvement and at the close of the week a leading refiner was working on an inquiry from France for 50,000 barrels of U. S. Motor, prime and water white kerosene for nearby shipment while one of the big Independent refiners was working on an inquiry from London for 45,000 barrels of 64-66 gravity 375 e.p., prime and water white kerosene for November shipment.

On Saturday, U. S. Motor was freely offered at 10½ to 10¾ cents a gallon; 60-62 gravity 400 e.p. at 10⅞ cents; 61-63 gravity 390 e.p. at 11⅛ cents a gallon and 64-66 gravity 375 e.p. at 11⅞ cents a gallon.

Cased gasoline passed a quiet week. One of the smaller Independents is reported to have booked an order for 25,000 cases of U. S. Motor and 64-66 gravity 275 e.p. for November shipment to the Near East. Cased motor was quoted at $2.10 a case and 64-66 gravity 375 e.p. at $2.30 a case, in cargo lots.

Domestic Gasoline—New York

Jobbing demand for gasoline has fallen off a little. The easier tendency in bulk gasoline has tended to discourage buying ahead while weather conditions have not been as good as anticipated. U. S. Motor was offered at 11¾ cents a gallon at the refineries and 12¾ cents a gallon in tank cars delivered to the trade, but the small marketers are content with placing orders for immediate needs. There has been considerable talk of an impending cut in the tank wagon price in New York and New England but this has not materialized.

Domestic Gasoline—Gulf Ports

Consumption of gasoline is holding up fairly well. Weather conditions have been more favorable, but in view of the downward tendency in bulk gasoline, buyers were reluctant to purchase ahead. At the refineries, U. S. Motor was quoted at 10¾ cents a gallon in tank car lots. Stocks of gasoline are reported to be piling up. Tank wagon prices remained unchanged.

Export Kerosene—New York

The export demand for kerosene is a little more spirited and refiners appear less inclined to press sales, although a little shading is still being done. There was a rumor current of an offering of water white at 10 cents a gallon, but most of the big refiners were demanding 10¾ cents for water white and 10½ cents for prime white at the refineries with indications that 10½ and 10¼ cents could easily have been done. Export prices remained unchanged. As mentioned above, there were several inquiries for mixed cargoes. Cased kerosene was in fair demand. One of the big refiners sold 25,000 cases for nearby shipment to China.

Export Kerosene—Gulf Ports

At the close of the week water white in bulk was quoted at 9¼ to 9½ cents a gallon while prime white ranged from 8 to 8⅛ cents a gallon at New Orleans. The export demand has shown a fair improvement but stocks are large and prices barely steady. There was an inquiry for 35,000 barrels of prime and water white kerosene for November-December shipment to Europe probably Scandinavia. Cased kerosene was in better demand although most of the orders were for less than 5000 cases. Prime white in cases was held at $1.75 and water white at $1.85 a case, cargo lots. A Japanese buyer was inquiring for 35,000 cases of prime and water white kerosene for November-December shipment but this has not yet materialized.

Domestic Kerosene

Domestic consumption of kerosene is steadily gaining but stocks are still large and prices are easy. Due to this state of affairs, buyers are confining their purchases to rather small quantities and prices have been easy. At New York harbor refineries, water white was freely offered at 10¾ cents a gallon and prime white at 10½ cents while in tank cars delivered to the trade the prices were 11¾ cents and 11½ cents a gallon. In the Gulf section water white was quoted at 9¼ cents a gallon, in tank cars at the refineries.

Lubricating Oils—New York

Most of the New York brokers and marketers reported a very quiet week in the lubricating oils. Refiners reported a dearth of export orders, and prices for most grades of Pennsylvania oils are still soft. Pennsylvania 600 steam refined unfiltered cylinder stock is offered freely at 18 cents a gallon with buyers showing little or no interest. There was a rumor current of the sale of 45,000 barrels of assorted lubricants for prompt shipment to the Continent but this lacked confirmation. Paraffin oils have been in slightly better demand.

Lubricating Oils—Gulf Ports

Export demand for zero cold test oils is still very disappointing although there has been a marked improvement in the inquiry. Stocks on hand are large and foreign buyers are keeping in close touch with developments. Refiners feel that with the first indication of a strengthening in the market there will be a much heavier export demand. At present, domestic buying is of a light, scattered nature. Prices were steady and showed very little change from a week ago.

Waxes—New York

Demand for paraffin waxes failed to show any improvement last week. There were very few export orders in the market. The bulk of the foreign business is still being taken care of by two of the leading Atlantic seaboard refiners who are shipping large quantities abroad on consignment. Stocks of wax are large and prices showed a downward tendency. Domestic consumption is fair but not large enough to absorb the heavy stocks on hand.

At the close of the week refiners were freely offering white crude scale 122-124 A.m.p. at 4.90 cents a pound and 124-126 A.m.p. white crude scale at 4.95 cents a pound. The fully refined waxes were unusually dull. Fully refined 120-122 A.m.p. is offered freely at 5¾ cents a pound.

Waxes—Gulf Ports

Conditions in the Gulf wax markets failed to show any improvement over a week ago. One of the big Spanish buyers was reported inquiring for a large quantity of white crude scale wax but has not yet bought anything of consequence.

White crude scale 124-126 A.m.p. was quoted at 4¾ cents a pound while semi-refined 124-126 A.m.p. was quoted at 4.85 cents a pound. Fully refined waxes were quoted as follows: 123-125 A.m.p. at 5⅝ cents; 125-127 A.m.p. 5⅝ cents; 128-130 at 5¾ cents; 130-132 at 6 cents; 133-135 A.m.p. at 6¼ cents; and 135-137 at 6½ cents.

Bunker Oil—New York

Demand for grade C bunker oil was a little more spirited last week but was chiefly for nearby bunkering purposes and no export buying was reported. The big refiners are still quoting from $1.65 to $1.75 a barrel for grade C at the refineries and from $1.71½ to $1.81½ a barrel f.a.s. New York harbor. Business was routine and chiefly against standing contracts. Diesel oil was quiet but steady at $2.50 a barrel f.o.b. refinery.

Bunker Oil—Gulf Ports

No cargo sales of bunker oil were reported. Offerings in bulk were small but refiners expressed the belief that grade C could have been picked up at $1.36 at ports in the vicinity of New Orleans. The price for bunkering was quoted at $1.60 a barrel f.o.b. New Orleans. There were no cargo offerings of bunker oil at Tampico while for bunkering purposes the price was $1.55 a barrel f.o.b. Tampico including taxes. Two cargoes of Panuco crude oil, 50,000 barrels each were sold by one of the big Independents to a European buyer for November shipment.

Gas Oil—New York

The demand for gas oil has shown a slight improvement the past few days. However, export buying is still very disappointing as many of the big European consumers are drawing on Poland for their supplies. Domestic consumption is soaring and the refiners are firm at 6¾ cents for 36-40 gravity and 6 cents for 28-34 gravity at the New York harbor refineries.

Gas Oil—Gulf Ports

The demand for gas oil is a trifle better, although still disappointing. There was an inquiry, presumably from Scandinavia for 40,000 barrels of 26-28 transparent gas oil for November shipment but this was not placed, probably due to the low ideas of buyers, according to oil men. The big refiners reported a more active domestic demand and 26-28 red transparent was steady at 5¼ cents while 32 plus dark oil is quoted at 5 cents a gallon.

Complete Export Markets

New York Export Market

GASOLINE	Nov. 1	Oct. 25
U. S. Motor Tank cars Ref.	11¾	-12
U. S. Motor cases	27.15	-27.40
California grade U. S. Motor F. O. B. N. Y. Cargoes	11¼	-11½
KEROSENE		
43-45-150W.W.Tank cars Ref.	10¾	-10¾
43-45-150W.W.Cases	19.65	-19.65
42-44-110S.W.Cases	19.15	-19.15
GAS OIL		
36-40, Bulk Refinery	-06¾	-06¾
28-34, Bulk Refinery	-06	-06
MEXICAN BUNKER OIL		
Grade C, f. o. b. ref. Bulk	1.65-1.75	1.65-1.75
Diesel Oil f. o. b. ref. Bulk	-2.50	-2.50

LUBRICATING OILS

The following prices are cooperage basis f. o. b. New York, products being manufactured by inland refineries.

CYLINDER OILS (Bbls.)

1 inch Immersion Test; All Penna. Products

Filtered D 600	27	-27
Filtered E 600	26	-26
Unfiltered 600 s. r.	18	-18
Unfiltered 650 s. r.	24	-24
600 flash s. r.	26	-26
630 Flash	34	-34

RED PARAFFIN (Bbls.)
(Viscosity at 70)

300 vis.	No. 5 color	21	-21
250 vis.	No. 5 color	20	-20
High Viscosity	No. 5 color	25	-25

NEUTRAL OILS (Bbls.)
(Viscosity at 70)

200 vis.at F.Pale	No. 3 color	-31	-31
180 Pale	No. 3 color	-29	-29
150 Pale	No. 3 color	-24½	-24½

BLACK OIL (Bbls.)

25-30 cold test	13½	-13½
15 cold test	14½	-14½

MEDICINAL OILS
(Includes Price of Drums)
(Penna. Stocks)

	Nov. 1	Oct. 25
Domestic 875-885 s. g.	- .85	- .85
Domestic 865-.870 s. g.	.75- .80	.75- .80
Russian 885-.890 s. g. 325-330 vis.	1.10-1.25	1.10-1.25

WAXES
(Penna. Stocks)
(F. A. S. Carload Lots)

WHITE CRUDE SCALE		
122-124 A. m. p.	-4.90	-4.90
124-126 A. m. p.	- .05	- .05
MATCH		
105-108 A. m. p.	-05¾	- 06
FULLY REFINED		
120-122 A. m. p.	-05¾	-05¾
123-125 A. m. p.Philadelphia.	-05¾	-05¾
125-127 A. m. p.	-05¾	-05¾
128-130 A. m. p.	-06	-06
130-132 A. m. p.	-06¼	-06¼
133-135 A. m. p.	-06⅜	-06⅜
135-137 A. m. p.	-06¾	-06¾
YELLOW CRUDE SCALE		
124-126 A. m. p.	-4.90	-4.90

PETROLATUMS
(Penna. Stocks)
Per Pound

Dark Green	02	02
Veterinary	02⅜	02⅜
Light Amber	03¼	03¼
Dark Amber	03½	03½
Cream	06	06
Lily White	07¾	07¾
Snow White	08¾-10	08¾-10

Gulf Export Market

GASOLINE
F. O. B. Seaboard
(Shipments of 20,000 Bbls. and over)

	Nov. 1	Oct. 25
U. S. Motor, Bulk	10¼-10¾ 10¾-.11	
60-62 400 e. p. Bulk	-10⅞	-.11
61-63-390 e. p. Bulk	-11⅛	-.11¼
64-66-375 e. p. Bulk	-11⅜	-.11¾
U. S. Motor, Cases (cargo lots.	2.10	2.10
64-66 Cases (cargo lots)	2.30	2.30
KEROSENE		
Water White, 43-45 bulk	09¼ 09½	09¼-09½
Prime White, 41-43 Bulk	-08 08	-08¼
Water White,cases (cargo lots)	1.85	1.85
Prime White,cases (cargo lots)	1.75	1.75
DOMESTIC GAS AND BUNKER OIL		
26-28, gravity, bulk*	05¼	-05⅛
32 plus, bulk, Dark	05	-05
Grade C, Bunker oil	1.60	-1.60
Cargoes	1.36	-1.36

*Transparent through neck of a 4 oz. bottle

MEXICAN CRUDE AND BUNKER OILS
F. O. B. Steamer Tampico

Heavy, Taxes to be added	nominal	1.15
Grade C, Bunker oil Taxes paid cargoes	nominal	nominal
Grade C, Bunker oil, F. O. B. Tampico, For Bunkering Purposes, taxes paid	1.55	-1.55

SOUTH TEXAS
(Viscosity at 100° F; cold test 0)
(Tanker, F. O. B. Houston)

*LUBRICATING OILS	Nov. 1	Oct. 25
100 Vis. No. 2 Unfiltered Pale	07¾	07¾
150 Vis.No.2½ Unfiltered Pale	10¼	10¼
200 Vis. No. 3 Unfiltered Pale	11	11
300 Vis. No. 3 Unfiltered Pale	12½	12½
500 Vis.No.3½ Unfiltered Pale	14	14
200 Vis. No. 3½ Red Oil	10½	10½
300 Vis. No. 5½ Red Oil	11	11
500 Vis. No. 6 Red Oil	12	12
800 Vis. No. 6 Red Oil	16¼	16¼

*These prices are entirely nominal owing to wide fluctuations.

Pacific Export Market

(Cargo lots quotations at seaboard, Los Angeles Gravity test on A.P.I. scale

	Nov. 1	Oct. 25
Gasoline, U. S. Motor— 54°-56°	09 - 9½	09 - 9½
Gasoline, U. S. Motor— blends and special cuts	10 -10½	10 -10½
Gas Oil, 30°—34° per bbl	$1.30-1.35	1.35-1.40
Diesel Oil, 27°—plus per bbl	$1.00-1.15	1.00-1.15
Bunker Oil, 14°—18° per bbl	$ .85-1.00	.85-1.00
Fuel Oil, 14°—18° per bbl	$ .85-1.00	.85-1.00
Kerosene, W. W. 38°—40° per gal., 125-150 flash test	.06 -06½	.05½- .06
Cased Goods		
Gasoline, U. S. Motor	$2.25	-2.25
Kerosene, W. W. 38°—40° per case, 125-150 flash	$1.45-1.55	$1.45-1.55

N. Y. Domestic Market

The following light oil, gas and fuel oil prices are F. O. B. New York refineries, being products made from Domestic (including California) and Mexican Crudes.

	Nov. 1	Oct. 25
U. S. Motor Gasoline, Tank Cars Delivered greater N.Y.	-12¾	-12¾
U. S. Motor Gasoline, Tank Cars Bayonne	-11¼	-12
U. S. Motor Tank Cars, *Atlantic Seaboard Terminals.	-11¼	11¼-12
Kerosene, 44 150 W. W. Tank Cars d'd greater N.Y.	11¼	-11¼
Grade C Bunker f.o.b.N Y.Ref	1.65-1.75	1.65-1.75
Diesel Oil f.o.b. Refinery	2.50	2.50
Gas Oil, 36-40, Bulk Refinery	-06¾	-06¾
Gas Oil, 28-34 Bulk, Refinery	-06	-06

*New York, Philadelphia, Portsmouth, Va. Charleston, S. C.

Crude Oil Prices, as Posted by Major

EASTERN FIELDS
(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Allegheny, N. Y. District)	$3.40
Bradford District Oil in National Transit Lines (Bradford District)	3.40
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.30
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.30
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.25
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	3.05
Keister Grade in National Transit Lines (Butler Co.)	2.05
Gaines Tioga Co. (Pa.)	2.85
Cabell Grade in Eureka Pipe Lines (West Virginia)	2.40
Corning Grade in Buckeye Pipe Lines (Ohio)	2.55
*Somerset Medium in Cumberland Pipe Lines (Kentucky)	2.50
*Somerset Light in Cumberland Pipe Lines (Kentucky)	2.65
Ragland Grade in Cumberland Pipe Lines (Kentucky)	1.25

*Somerset oil run prior to Oct. 1, 1925, takes price of 6 cents lower than above quotations.

(Posted by Stoll Oil Refining Co.)

Tinsley Bottom Tenn oil in Stoll lines	$2.46
Oil City Ky. oil in Stoll lines	2.65

CENTRAL STATES FIELDS
Posted by Ohio Oil Co.

Wooster	$2.55	Illinois	$2.37
Lima	2.48	Plymouth	1.99
Waterloo	1.35	*Canadian Petrolia	2.88
Indiana	2.25	*Posted by Imperial Oil Ltd.	
Princeton	2.37		

OKLAHOMA, KANSAS And NORTH TEXAS
Prices of Prairie Oil & Gas Co.
(In Oklahoma, Kansas, North and East Central Texas
Effective May 15, 1926.

28-28.9	$1.65	34-34.9	$2.13
29-29.9	1.73	35-35.9	2.21
30-30.9	1.81	36-36.9	2.29
31-31.9	1.89	37-37.9	2.37
32-32.9	1.97	38-38.9	2.45
33-33.9	2.05	39-39.9	2.53
40-40.9	$2.61	47-47.9	$3.17
41-41.9	2.69	48-48.9	3.25
42-42.9	2.77	49-49.9	3.33
43-43.9	2.85	50-50.9	3.41
44-44.9	2.93	51-51.9	3.49
45-45.9	3.01	52 and above	3.57
46-46.9	3.09		

The Texas Co. posted same gravity and price as Prairie.

Humble Oil & Refining Co. Prices
(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

On Nov. 1, Humble began paying $1.50 for 28–28.9, with 5 cents additional for each succeeding degree up to 52 and above which is $2.70. Humble's gravity schedule is same as Prairie's.

Mirando, Tex	$1.25

Magnolia Petroleum Co. Prices
In Oklahoma, Kansas and North and East Central Texas

Same grades and prices as posted by Prairie excepting that Magnolia is paying $1.30 for all oil below 28° gravity.

Corsicana heavy	$1.25

PANHANDLE, TEXAS
Humble Oil & Refining Co.

Hutchinson, Carson and Wheeler Counties....$1.25
Gray County:

28-28.9	$1.00	37-37.9	$1.45
29-29.9	1.05	38-38.9	1.50
30-30.9	1.10	39-39.9	1.55
31-31.9	1.15	40-40.9	1.60
32-32.9	1.20	41-41.9	1.65
33-33.9	1.25	42-42.9	1.70
34-34.9	1.30	43-43.9	1.75
35-35.9	1.35	44 and above	1.80
36-36.9	1.40		

Magnolia Petroleum Co. posted flat price of $1.25 for all Panhandle Crude on Sept. 22, and Kay County Gas Co. on Oct. 4.

WEST TEXAS
(Crane, Upton and Crockett Counties)
Humble Oil & Refg. and Kay County Gas Co.

Below 26	$ .80	31-31.9	$1.10
26-26.9	.85	32-32.9	1.15
27-27.9	.90	33-33.9	1.20
28-28.9	.95	34-34.9	1.25
29-29.9	1.00	35-35.9	1.30
30-30.9	1.05	36 and above	1.35

NORTH LOUISIANA—ARKANSAS FIELDS
***Prices of the Standard Oil Co. of Louisiana**

Caddo, below 26	$1.40
" 26-28.9	1.55
" 29-31.9	1.70
" 32-32.9	2.25
" 35-37.9	2.35
" 38 and above	2.45
Homer, below 31	1.85
" 31-32.9	2.00
" 33-34.9	2.10
" 35 and above	2.20
Haynesville, below 33	2.00
" 33 and above	2.10
El Dorado, including Lisbon, below 33	2.00
" 33-34.9	2.10
" 35-36.9	2.20
" 37 and above	2.30
Bull Bayou, 32-34.9	1.95
" 35-37.9	2.10
" 38 and above	2.25
Smackover, below 24	1.10
" 24-24.9	1.35
" 25-25.9	1.40
" 26-26.9	1.45
" 27 and above	1.50
De Soto	2.30
Crichton	2.10
Bellevue	1.40
Cotton Valley	1.20
**Urania, La.	1.10
†Calion (East El Dorado)	.95

*Gulf, Louisiana Oil Refining and The Texas Co. same prices as Standard.

**Posted by Louisiana Oil Refining Corp.

†Posted by Gulf.

STEPHENS, ARKANSAS
Posted by Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

26 and above	$1.65	Below 26	$1.45

GULF COASTAL FIELDS
Posted by Humble Oil & Refining Co.

Grades A	$1.40	28-28.9	$1.65
Grades B:		30-30.9	1.70
Below 25	1.40	31-31.9	1.75
25-25.9	1.45	32-32.9	1.80
26-26.9	1.50	33-33.9	1.85
27-27.9	1.55	34-34.9	1.90
28-28.9	1.60	35 and above	1.95

Fields classified as A and B are Goose Creek, Hull, Liberty, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

Crude Price Changes

HOUSTON, Nov. 1.—On Nov. 1 Humble Oil & Refining Co. assumed the leadership in reducing all grades of crude it purchases in North Texas, Ranger, Mexia, Powell, Richland, Currie, Lytton Springs, Wortham, Moran and Nocona fields ranging from 15 cents to 87 cents per barrel, and reduced the 8 cent differential it has been paying for each full succeeding degree of gravity, to 5 cents. Price now of minimum grade of 28 to 28.9 gravity, is $1.50, with 5 cents added for each succeeding degree of gravity, up to maximum grade of 52 and above, which is $2.70. All oil below 28 gravity is posted at 5 cents less for each degree below 28.

Humble also reduced all grades of Gray county crude in Texas Panhandle 10 cents per barrel, making minimum grade of 28 to 28.9 gravity in Gray county $1, and maximum grade of 44 and above, $1.80. Hutchinson, Carson and Wheeler counties in the Panhandle were unchanged, as were Gulf Coastal, Laredo district and West Texas crudes.

* * *

SHREVEPORT, Nov. 1.—On Oct. 29 Gulf Production Co. reduced Evangeline crude in southern Louisiana, 20 cents per barrel, to $1.15 per barrel at wells.

BETTER GREASES BETTER PRICES

NON-CHATTER BASE

Mixes Cold - Economical

SCHAEFFER BROS. & POWELL MFG. CO.

Since ST. LOUIS, MO. *1839*

All kinds of Lubricating Grease for Jobbers

Gulf Coast Lube Sales Increase

HOUSTON, Nov. 1.—Jobbers are reported to be coming into the Gulf Coastal lubricant market with more regularity than for some time past, partly because of earlier hand-to-mouth purchases. Weather in southwestern territory and the demoralized cotton markets had held back small buyers. Manufacturers say increased lubricant sales reflect a healthy condition, which they hope to see maintained.

ESTHERVILLE, IA.—Estherville Oil Co. has installed all of its lubricating oil storage in the basement, with visible pumps in the office, according to R. E. Drake. This has been done to keep the oil warm, Mr. Drake says.

Mr. Drake recently purchased a new Reo speed wagon at Fort Dodge.

Purchasers, in All Fields (in Effect, Nov. 1, 1926)

GULF COASTAL FIELDS
Prices of The Texas Co.

Grades A	$1.60	*Grades B	$1.60
‡Grades B (light crude):			
35-35.9	$2.05	38-38.9	$2.20
36-36.9	2.10	39-39.9	2.25
37-37.9	2.15	40 and above	2.30

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

SPINDLETOP
Humble Oil & Refining Co.

Grade A	$1.25	25-25.9	$1.30
Grades B:		26-26.9	1.35
Below 25	$1.25	27-27.9	1.40
28-28.9	$1.45	30-30.9	$1.55
29-29.9	1.50	31-31.9	1.60

ROCKY MOUNTAIN FIELDS
Prices of Ohio Oil Co. and Midwest Refining Co

‡Salt Creek	29-29.9	$1.73
" "	30-30.9	1.81
" "	31-31.9	1.89
" "	32-32.9	1.97
" "	33-33.9	2.05
" "	34-34.9	2.13
" "	35-35.9	2.21
" "	36-36.9	2.29
" "	37 and above	2.37
Elk Basin		2.40
Grass Creek light		2.40
Big Muddy		$2.35
Lance Creek		2.40
Rock Creek		2.25
‡Osage		2.40
‡Cat Creek, Mont		2.40
Sunburst, Mont		1.35
‡Hogback, N. Mex		2.45
Artesia, N. Mex		2.20

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light, and Elk Basin.

The Texas Co. buys Salt Creek and Big Muddy crude.

CALIFORNIA
Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Huntington Beach	Inglewood Tottance	Whittier La Habra	Newhall, McKittrick, Kern River	Olina-Brea Canon, Richfield	Athens-Rosecrans Dominguez	Monte-bello	Coyote Hills	Santa Fe Springs	Midway Sunset Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santz Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	.....	$ .85	$ .85	.....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.87	.87	.85	.75	.87	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
16-16.9	.90	.90	.85	.75	.90	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
17-17.9	.94	.94	.85	.75	.94	.....	.85	.85	.....	.75	.75	.75	.75	.85	.85
18-18.9	.98	.98	.86	.75	.98	.....	.86	.86	.....	.75	.75	.75	.75	.85	.85
19-19.9	1.04	1.04	.87	.75	1.04	.....	.87	.87	.....	.75	.75	.75	.75	.85	.85
20-20.9	1.10	1.10	.89	.....	1.10	.....	.89	.90	.....	.82	.82	.79	.78	.90	.80
21-21.9	1.16	1.16	.91	.....	1.16	.....	.91	.98	.....	.90	.90	.86	.81	.97	.97
22-22.9	1.22	1.22	.94	.....	1.22	.....	.94	1.06	.....	1.00	1.00	.93	.85	1.04	1.04
23-23.9	1.28	1.28	.....	.....	1.28	.....	.97	1.14	.....	1.11	1.11	1.00	.89	1.11	1.11
24-24.9	1.34	1.34	.....	.....	1.34	$1.34	1.01	1.22	$1.02	1.22	1.22	1.07	.93	1.18	1.18
25-25.9	1.40	1.40	.....	.....	1.40	1.40	1.05	1.30	1.08	1.33	1.33	1.14	.97	1.25	1.25
26-26.9	1.46	1.46	.....	.....	1.46	1.46	1.38	1.16	1.44	1.44	1.21	1.01	1.32	1.32	1.32
27-27.9	1.52	1.52	.....	.....	1.52	1.52	1.13	1.46	1.24	1.55	1.55	1.28	1.05	1.39	1.39
28-28.9	1.58	1.58	.....	.....	1.58	1.58	1.17	1.54	1.32	1.66	1.66	1.36	.....	1.46	1.46
29-29.9	1.64	.....	.....	1.64	1.64	1.64	1.21	1.62	1.40	1.77	1.77	1.42	.....	1.53	1.53
30-30.9	1.70	.....	.....	.....	1.70	1.70	1.25	1.70	1.48	1.88	1.88	1.49	.....	1.60	1.60
31-31.9	1.76	.....	.....	.....	.....	1.76	.....	.....	1.60	1.99	1.99	1.56	.....	.....	1.67
32-32.9	1.84	.....	.....	.....	.....	1.84	.....	.....	1.72	2.10	2.10	1.63	.....	.....	1.73
33-33.9	.....	.....	.....	.....	.....	1.92	.....	.....	1.84	2.21	2.21	1.70	.....	.....	1.79
34-34.9	.....	.....	.....	.....	.....	2.00	.....	.....	1.96	.....	2.32	1.77	.....	.....	1.85
35-35.9	.....	.....	.....	.....	.....	2.08	.....	.....	2.08	.....	.....	1.84	.....	.....	1.92
36-36.9	.....	.....	.....	.....	.....	2.16	.....	.....	2.16	.....	.....	.....	.....	.....	.....
37-37.9	.....	.....	.....	.....	.....	2.24	.....	.....	2.24	.....	.....	.....	.....	.....	.....
38-38.9	.....	.....	.....	.....	.....	2.34	.....	.....	2.34	.....	.....	.....	.....	.....	.....
39-39.9	.....	.....	.....	.....	.....	2.44	.....	.....	2.44	.....	.....	.....	.....	.....	.....
40-40.9	.....	.....	.....	.....	.....	2.54	.....	.....	.....	.....	.....	.....	.....	.....	.....
41-41.9	.....	.....	.....	.....	.....	2.64	.....	.....	.....	.....	.....	.....	.....	.....	.....
42-42.9	.....	.....	.....	.....	.....	2.74	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are the average market prices for the week on materials used by refiners and compounders f. o. b. shipping point as effective this date.

Refiners' Supplies

	Nov. 1	Oct. 25
Soda Ash light 58⅓ bags.cwt.	$1.38	$1.38
Silicate of Soda 60 deg. drums.....cwt.	-$1.65	-$1.65
Sal Soda wks.....90-	1.10	.90- 1.10
Caustic Soda 70⅓ solid..cwt.	- 3.10	- 3.10
Chloride of Lime.....cwt. works.....	- 2.00	- 2.00
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point.....per ton	10.50-11.00	10.50-11.00
Liquid Chlorine tank cars works.....lb.	- .04	- .04

Compounders' Supplies (Open Market)

Vegetable Oils—		
Linseed carloads spot.....lb.	11.1	11
Nov.-Dec.	11.1	11
Tanks, spot	10.6	10.5
Boiled carloads spot.....lb.	11.3	11.2
*Soya Bean spot, Bbls....lb.	14¾	14¾

Castor Oil—		
No. 1 Carlots, Bbls	-.12¼	-.12¼
No. 3 Carlots, Bbls	-.11¾	-.11¾
Animal Oils—		
English Degras	.05½	-.05½
Domestic Degras, bbls., carloads.....lb.	-.04¼	-.04¼
*Horse.....lb.	-.08¼	-.08¼
Oleic Acid—		
Dist. Bbls.....lb.	.09¾-.10¼	.09¾-.10¼
Saponified Bbls.....lb.	.10 -.10½	.10 -.10½
Lard Oils—		
Prime		
Winter Strained. to 1¼ ffa.	.40/45c.t.lb.	.16⅞ .16¾
Extra Winter Strained. 2 to 4½ ffa.	.40-45c.t.lb.	.13¼ .12¾
Extra..... 4 to 5 ffa.	.40-45c.t.lb.	.12½ .12¼
Extra No. 1. 7 to 10 ffa.	.40- 50c.t.lb.	.11¼ .11¼
No 1.....15 to 18 ffa.	.40-45c.t.lb.	.11 .11
No. 2.....22 to 25 ffa.	.40-45c.t.lb.	.10¾ .10¾
Prime Edible Tallow under 1⅞ ffa.		
40 45c.t.N.Y.....lb.	-.09	-.09¼
Tallow acidless.....lb.	-.11	-.11¼
Lard Stearine.....lb.	-.17	-.17
Oleo Stearine.....lb.	-.10¾	-.11¼
Neatsfoot Oil—		
Pure.....bbls.-lb.		.15¾ .15¼
Extra.....do lb.		.11¼ .11¼

No. 1.....bbls.-lb.	.11	.11
Cold pressed.....lb.	.18¾	.18¾
Fish Oils—		
Menhaden Oil		
Light pressed.....gal.	-.62	-.62
White.....gal.	-.69	-.69
Yellow bleached.....gal.	-.67	-.67
*Herring tank cars coast.....gal.	-.47	-.47
Whale, extra winter bleached.....gal.	-.82	-.82
Seal.....gal.		nominal
Naval Stores—		
Turpentine, N. Y.....gal.	-.87½	-.89½
Turpentine†.....gal.	-.83	.83
Rosin, B. N. Y.....bbl.	13.45	13 50
Rosin, F. N. Y.....bbl.	13.50	13.60
Rosin, B†.....bbl.	11.70	11.75
Rosin, F†.....bbl.	11.70	11.75
Rosin Oil 1st run.....gal.	.85	.85
Rosin Oil 2nd run.....gal.	.90	.90
Pine Tar—		
Kiln Burnt.....bbl.	16.00	16.00
Retrt.....bbl.	18.50	18.50

†Savannah, Ga. market.
*Nominal.

Alcohol—Denatured—		
Formula 5		
Bbls.....gal.	-40	-40
Drums.....gal.	-33	-33

Market Section

Air and Gas Lifts

(Continued from page 40)

itial output of about 5000 barrels at the time of its completion Sept. 13. It is also making about 200 barrels of water daily, although it is not certain that this water is coming from the oil sand. The well had the Wilcox at elevation minus 3210 feet, and is, therefore, considerably higher structurally than many other wells which made no water and are making considerably more oil.

Gas Must Be Denuded

THIS well is producing about 1,375,000 cubic feet of gas daily, or about 530 cubic feet per barrel of oil. This gas is compressed to 500 pounds pressure and introduced into the well through a string of 2-inch tubing. Bottom of tubing is now at about 3100 feet, or about 1050 feet above bottom of hole. Four Chicago Pneumatic Tool Co. compressors are forcing this gas down the well, the gas making a continuous circuit from the well, through the compressors, down into the well again, up with the oil, and into the separator. Two of the compressors are being run by electric motors and two by Waukesha gasoline engines. The gas coming from the well is so rich in gasoline that it could not be handled through the high-pressure cylinders of the compressors, and it was necessary to install a small plant to denude the gas before it could be used.

The gas, after passing through the low-pressure cylinders of the compressors, runs through a simple gasoline plant consisting essentially of two heat exchangers and two accumulator tanks. The denuded gas then returns through the high-pressure cylinders and into the well. This small plant has been making 3000 to 4000 gallons of gasoline a day, the gasoline being placed in storage. In this instance production of gasoline is incidental and is looked upon as more of a nuisance than anything else, as the main idea in stripping the gas is to make it fit to use in the compressors.

Drilling at Seminole presents comparatively few difficulties there being no big gas sands to penetrate and very little cavey formation, both of which were big factors of delay in other fields in the general vicinity, such as Wewoka and Cromwell. Rotaries are being used universally down to around 3600 feet, where the wells are standardized and drilled in with cable tools. It is the general custom to set the 8-inch pipe at from 3300 to 3600 feet, where it is cemented, and the hole taken on down with 8-inch cable tools. It has been the custom to set 6-inch casing on top of the Hunton lime and to set the 5-inch on top of the White lime, which is just above the Wilcox. Future practice probably will be to carry the 6-inch on down to the white lime. Some operators have been setting the 8-inch at 2800 to 2900 feet, but this is the exception.

Steel Derricks Mostly

THE timber derrick is almost nonexistent at Seminole, practically all companies using either all-steel or combination steel and wood 112-foot towers. The derrick used for rotary drilling is retained when the well is standardized, the derricks being constructed so as to accommodate machinery for either drilling method. As a general thing, the same contractor takes the well all the way down, it being almost necessary nowadays in Oklahoma for a contractor to be able to drill with both rotary and cable tools, as the companies prefer not to change contractors on a well. The ruling price for drilling is $6 a foot for rotary and $1 less for cable tools. All rotaries are using the heaviest and most modern equipment. The average well probably costs around $65,000.

Production at Seminole has risen so rapidly in the past few weeks that it has gone far beyond the available pipe line facilities, resulting in severe pipe line congestion. A number of companies are rushing construction of large steel storage tanks, but none has been completed yet. An extensive program of adding to the field's pipe line facilities also is under way, and it is probable that its pipe line capacity will be about 175,000 barrels daily by Dec. 1.

Pipe Lines May Prorate Runs

IT is not unlikely that the pipeline companies will prorate runs, now that the shutdown movement apparently has failed to bring about agreement among the operators. Present conditions amount to proration, in fact, as the pipe line companies are handling all the oil their lines can take care of and are forced to refuse new connections in many instances.

Gulf Pipe Line Co., now running about 9000 barrels out of the field, will be able to handle 30,000 barrels when all its construction work now under way has been finished. Its facilities will include two 4-inch and one 8-inch line to its Grayson Station on the main line.

Magnolia Pipe Line Co. has about 8000 to 9000 barrel capacity out of the field but this will be increased to about 15,000 barrels when larger pumps are installed.

Oklahoma Pipe Line Co. (Carter Oil Co.) is now pumping out about 22,000 barrels daily, and will be able to handle 55,000 barrels when its new construction has been completed.

Ozark Pipe Line Co. (Roxana) is laying a 4-inch line from Seminole to Cromwell to a point on its six-inch main line This company will be able to handle about 5000 barrels when this line has been completed.

Present runs of the Prairie Pipe Line Co., out of the field are 21,000 barrels. This will have been increased to 32,000 barrels in the next 10 days, and to 40,000 barrels by Dec. 1.

Sinclair Refining 12,000 Bbls.

SINCLAIR Crude Oil Purchasing Co., now running about 12,000 barrels daily, will be able to handle 20,000 barrels when new line and pump stations are completed.

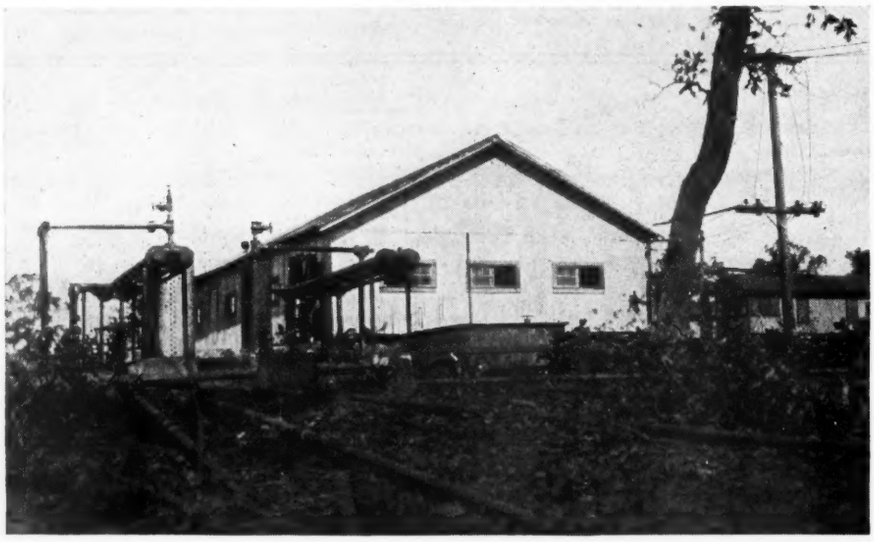
Independent Oil & Gas Co. is laying a 4-inch line from Seminole to the Wetumka field in 26-9-9, which will be able to handle 4000 barrels daily.

Shaffer Oil & Refining Co. also is laying a 4-inch line into the field, and will be able to handle 7000 barrels daily, it is said.

Tidal Oil Co. is laying a 4-inch to Cromwell, and will be able to move out about 5000 barrels daily.

Barnsdall Oil Co. is surveying and stringing pipe for its 6-inch line which should be able to handle 12,000 barrels daily.

Tidal Oil Co. is building three 80,000 barrel tanks, and Carter Oil Co. several of the same size. Gulf Pipe Line Co. has one 55,000-barrel tank under construction and the Oklahoma Pipe Line Co. two of the same size. The Indian Territory Illuminating Oil Co. is preparing to build three 55's. It is also planning on a loading rack on the Rock Island railroad, which cuts through the southwest portion of the field. Independent Oil & Gas Co. is using a loading rack and shipping out about 20 cars daily.



Amerada Petroleum Corp. compressor station, Killingsworth lease, Seminole field, Okla. Two compressors driven by electric motors, used to deliver high pressure gas to No. 1 well as gas lift. In foreground, stripping plant for removing gasoline from gas, which is too rich to be handled in its natural state through high pressure cylinders.

Transactions In Oil Shares on New York Stock Exchange

1925 High	1925 Low	1926 High	1926 Low		Listed Capital	Par Value	Stocks	Rate	Div. Last Paid	Transactions week ended Oct. 30 Sales	First	High	Low	Last	Ch'ge
....	....	82⅞	24¼	(sh)	713 000	N.P.	Amerada Corp.	50cQ	Oct. 30, 26	3,700	28¾	28¾	27½	28⅜	+ ⅛
79¾	48	74	47	(sh)	200 000	N.P.	American Republics	.....	.....	200	47	50	47	50	+3
47¼	32	59½	44¾	$	56 000 ,000	$25	Associated Oil	50cQ	Sept.25, 26	.....	.....	.....	.....	.....	.....
117½	95½	128¾	97		50,000 ,000	100	Atlantic Refining	.....	June 16, 24	6,500	100	104	100	103	+3
117¾	113½	120	115⅝		20,000 ,000	100	do pfd	$1¾Q	Aug. 2, 26	400	116½	116⅞	116	116	— ¼
33½	18¾	33½	23¾		25 ,000 ,000	25	Barnsdall Corp. A	50cQ	Oct. 1, 26	5,400	25½	26	25⅛	26	+ ⅛
30	16	29½	22½		3,713 ,275	25	do B	50cQ	Oct. 1, 26	300	22½	22½	†22½	22½	—1½
34¾	23⅛	38⅛	29¾	$	45 ,040 ,125	$25	California Petroleum	50cQ	Sept. 1, 26	5,500	30	30⅝	30	30½	+ ½
70	42½	94½	50		23 ,542 ,500	100	General Asphalt	.....	.....	37,600	72	76¼	70¾	73⅜	+1⅞
109	86½	140⅛	94⅞		7,416 ,000	100	do pfd	$1¼Q	Sept. 1, 26	400	112	115	112	114	+7
85	59	72	50¼		25 ,000 ,000	100	Houston Oil	.....	.....	2,000	51½	53⅜	51¼	53	+1¼
41¾	13½	84	19⅝	(sh)	500 ,000	N.P.	Independent Oil & Gas	25cQ	Oct. 18, 26	15,000	27¼	27½	26¼	26¾	—1
14¼	5½	13¾	7¾	$	3,204 ,590	$10	Indian Refining	.....	Dec. 15 20	500	8	8½	8	8½	+ ⅜
12⅝	6	12½	7½		4,545 860	10	do ctfs	.....	.....	4,800	8¼	8⅜	8	8⅛	+ ⅛
110	77	104	90		2,296 ,400	100	do pfd	.....	Dec. 15, 21	.....	.....	.....	.....	.....	.....
1⅛	¼	¾	¼		1,678 ,760	10	Kansas & Gulf	.....	.....	100	¼	¼	¼	¼	0
....	....	24½	19⅛	(sh)	4,000 ,000	N.P.	Lago Oil & Transport	.....	.....	29,300	20	21¾	19⅞	21½	+1⅝
23¾	13⅝	19⅞	12	(sh)	1,131 ,216	N.P.	Louisiana Oil Refining	.....	.....	3,000	14¼	14¾	14⅜	14¾	+ ¾
....	....	97	93½	$	4,000 ,000	$100	do pfd	$1¾Q	Aug. 16, 26	100	95	95	95	95	0
35½	20¾	28⅞	16½	(sh)	330 ,000	N.P.	Maracaibo Oil	.....	.....	2,800	17	18¼	16⅝	17½	+ ½
60½	32⅝	63¾	49¼	(sh)	1,895 823	N.P.	Marland Oil Co	$1Q	Sept. 30, 26	24,400	52⅜	54	52	53⅝	+1¼
250	225	....	....	$	45 ,942 ,800	$100	Mexican Petroleum	$3Q	Oct. 20, 26	.....	.....	.....	.....	.....	.....
....	....	....	....		12 ,000 ,000	100	do pfd	$2Q	Oct. 20 26	.....	.....	.....	.....	.....	.....
22½	20	13¾	6	(sh)	945 ,939	N.P.	Mexican Seaboard	.....	Nov. 15, 24	1,300	8½	8¾	8¼	8⅝	0
38	25¾	37	27½	(sh)	1 357 800	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 23	9,300	28⅞	29⅝	28⅝	29¼	+ ⅛
94¾	83	100⅛	90	$	6,718 000	$100	do pfd	$1¾Q	Sept. 1, 26	500	98½	99¾	98½	99¼	+ ⅜
5¼	⅜	2¾	⅞		25 ,415 ,540	10	Middle States	.....	July 1, 23	19,800	1	1⅛	† ⅞	1⅛	+ ⅛
1½	1½	1⅜	½		4,384 ,680	....	do ctfs	.....	.....	4,200	⅝	¾	½	¾	+ ⅛
78½	51⅜	83¼	1	(sh)	3,500 ,000	N.P.	Pacific Oil	.....	Jan. 20, 26	3,400	1⅜	1⅜	1⅜	1⅜	0
83⅞	59½	76½	56⅛	$	48 ,307 ,400	$50	Pan American P. & T	$1.50Q	Oct. 20, 26	4,000	60⅞	65½	60⅞	65½	+4½
84½	60⅛	78⅜	56⅞		91 ,025 ,100	50	do B	$1.50Q	Oct. 20, 26	63,700	61½	66	61¼	65¾	+4¼
49¾	37¼	46	30	(sh)	400 ,000	N.P.	Pan American Western B	50cQ	Oct. 30, 26	2,200	30⅝	31⅛	30½	31½	+1
6¼	2¼	32	4½	(sh)	198 ,770	N P.	Panhandle P. & R	.....	.....	11,000	13¼	17⅜	13	17	+3¾
60½	37	99⅜	51	$	2,935 ,200	$100	do pfd	.....	July 2, 23	100	69	73	69	73	—3
47⅛	36¼	52¾	40	(sh)	2,406 ,692	N.P.	Phillips Petroleum	75cQ	Oct. 1, 26	54,700	48¾	48¾	47⅝	48¼	— ⅜
3½	1¼	1⅞	½	$	29 ,622 ,925	$25	Pierce Oil Corp	.....	.....	2,700	½	½	½	½	0
40	20¼	27⅛	11½		15 ,000 ,000	100	do pfd	.....	Feb. 1, 22	800	11½	12	†11½	12	— ½
8¼	4½	7	2½	(sh)	2 ,500 ,000	N.P.	Pierce Petroleum	.....	.....	3,600	2½	3	2½	3	+ ⅛
32⅝	12½	20¾	11	$	11 ,467 ,850	$50	Producers & Refiners	.....	Sept.15, 23	27,700	18	*20¾	18	20	+2
47⅝	27	41¾	30¾		2,845 ,350	50	do pfd	.....	May 1, 25	2,200	41¾	*41¾	39	41¾	+2¼
33¾	25⅛	31	25¼		75 ,959 ,250	25	Pure Oil Co	$7½cQ	Sept. 1, 26	8,900	25⅞	26¾	25¾	26½	+ ⅞
108½	103	112¾	106		13 ,000 ,000	100	do 8% pfd	$2Q	Oct. 1, 26	.....	.....	.....	.....	.....	.....
57¾	48¼	57⅜	47⅜	(sh)	601 ,922	13.40	Royal Dutch, N. Y. shares	$1.739	Aug. 2, 26	2,800	48	48½	48	48½	+ ½
49	39½	48⅜	40¾	(sh)	93 ,345	£2	Shell Transport & T	$1.21	July 24, 26	200	42	42⅜	42	42⅜	—1⅝
28⅜	21⅝	30½	24	(sh)	10,000 ,000	N.P.	Shell Union Oil	35cQ	Sept. 30, 26	48,300	29½	30¼	29¼	29½	+ ⅜
106½	99½	114	103	$	20,000 ,000	$100	do pfd	$1½Q	Aug. 15, 26	.....	.....	.....	.....	.....	.....
28½	17¾	28⅝	15⅛		7,207 620	10	Simms Petroleum	50cS.A.	July 1, 26	11,400	17⅞	18⅜	17½	18	+ ½
24⅞	17	24⅞	16¾	(sh)	4,489 ,887	N.P.	Sinclair Consolidated	.....	May 31, 24	13,600	17¾	18⅝	17½	18⅜	+ ½
94⅝	78¾	99½	90	$	17 852 ,200	$100	do pfd	$2Q	Aug. 15, 26	400	94½	95½	94½	95½	+1
32½	21¾	36⅞	26⅝		23 ,988 ,590	25	Skelly Oil Co	50cQ	S pt. 15, 26	5,700	31½	32⅝	31½	32¼	+ ¾
....	....	63¾	52⅝	(sh)	13 ,016 ,434	N.P.	S. O California	50cQ	Sept. 15, 26	23,600	60½	60¾	60	60	— ¼
47½	38⅜	46⅜	40¼		515 ,109 ,675	25	S. O. New Jersey	25cQ	Sept. 15, 26	18,300	41⅜	42⅜	41⅜	42⅝	+ ⅝
119	116¼	119⅛	115¼		199 ,972 ,900	100	do pfd	$1¾Q	Sept. 15, 26	2,400	116¼	116½	116¼	116½	+ ¼
43⅞	38⅛	41⅝	30⅛	(sh)	1,103 ,931	N P.	Sun Oil	25cQ	Sept. 15, 26	200	32½	32½	32⅜	32⅜	— ⅛
6⅜	2	4¼	1	(sh)	1,121 ,368	N.P.	Superior Oil Corp	.....	Dec. 20, 20	97,100	2⅞	4½	2⅞	4½	+1¾
55	42¾	57¼	48	$	164 ,450 ,000	$25	The Texas Co	75cQ	Sept. 30, 26	32,400	52¾	54⅞	52¾	54	+1½
23⅜	10⅞	19½	12		8,380 ,340	10	Texas Pacific Coal & Oil	.....	June 30, 23	26,200	13½	15½	13	15⅜	+2⅜
36⅞	30¼	39¼	27½	(sh)	2,137 ,570	N.P.	Tide Water Oil Co	37½c	Sept. 30, 26	800	27¼	27½	†27¼	27½	— ½
101	99	103	88½	$	20 ,672 ,900	$100	do 5% pfd	$1.25Q	Aug. 15, 26	100	88½	88½	†88½	88½	— ½
5⅞	3½	5½	3	(sh)	3,742 ,029	N.P.	Transcontinental Oil	.....	.....	9,600	3¾	3¾	3⅝	3¾	0
43¾	33	58¾	37¼	$	40 ,480 ,800	$25	Union Oil of California	50cQ	Aug. 10, 26	12,600	55	55⅞	54	54⅝	— ⅞
134	96¼	120	80		24 ,423 ,300	100	Union Tank Car Co	$1½Q	Sept. 1, 26	1,200	114½	116	114½	115¼	—1⅝
117⅛	113¼	118	113¼		12 ,000 ,000	100	do pfd	$1¾Q	Sept 1, 26	600	116	116	116	116	+ ⅜
31¾	25½	29¼	25⅛	(sh)	490 ,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 20, 26	2,400	25¼	26	25¼	25⅝	+ ⅛

*New High †New Low xEx-Dividend Total Sales 672 ,000

Pittsburgh Stock Exchange

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions Week Ended Oct. 29 Sales	First	High	Low	Last	Ch'ge
....	....	8½	6⅝	N.P.	Andes Petroleum	.....	.....	.....	.....	.....	.....
8¼	5¼	8½	5¾	$10	Arkansas Nat. Gas	12,653	8⅛	8½	8	8⅜	+ ⅜
.....	.....	97½	79¾	100	Columbia Gas (w.i.)	35	83	83	83	83	0
.....	.....	97½	95	$100	Col. Gas & El.pfd.w.i.	125	97¾	98	97¾	98	+ ½
18	14½	17	12½	$10	Devonian Oil	592	14½	14½	14½	14½	0
112¾	105⅛	116	112	$100	Duquesne Lt. 7s pfd	95	115	115½	115	115½	— ½
.....	.....	10	5½	N.P.	Houston Gulf Gas	898	5½	5¾	5½	5¾	0
.....	.....	46	39	25	Lone Star Gas Corp	2,903	44	44⅞	43¾	44½	+ ½
37¼	31	45	33⅛	25	Ohio Fuel Corp	617	43½	*45	x43½	44½	+1⅜
.....	.....	45	42	....	do ctfs. of deposit	3,752	43½	*45	43⅛	44⅝	—1⅛
.....	.....	5½	5	....	Ohio Oil & Gas	120	5½	5½	5½	5½	0
34	26	34	28	25	Oklahoma Nat. Gas	.....	.....	.....	.....	.....	.....
.....	.....	20¼	19¼	....	do ctfs. of deposit	5,762	19½	20¼	19⅝	20¼	+ ¾
8¾	5	5⅝	3⅜	5	Pittsburgh O. & G	425	3½	3½	3½	3½	— ¼
9⅝	6	10	7½	10	Salt Creek Cons	25	7¾	7¾	7⅝	7⅝	+ ⅛
13¾	8½	25	8	10	Tidal Osage	5,627	23⅛	*25	22¾	24⅞	+1⅜
.....	.....	42½	40¾	N.P.	Waverly Oil Wks. "A"	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Market

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions Week Ended Oct. 29 Sales	First	High	Low	Last	Ch'ge
2½	.60	3⅜	2½	$ 5	Colombia Synd	.....	.....	.....	.....	.....	.....
.60	.15	.15	.15	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
9	5½	22	22	10	Forest Oil	.....	.....	.....	.....	.....	.....
....	....	....	....	....	Guffey-Gillespie Oil	.....	.....	.....	.....	.....	.....
92⅜	64	91½	85	25	Gulf Oil Corp	.....	.....	.....	.....	.....	.....
....	....	79	79	100	Houston Gulf pfd	.....	.....	.....	.....	.....	.....
12½	3¼	12	7½	N.P.	Leonard Oil & Dvlp	.....	.....	.....	.....	.....	.....
.....	.....	1⅝	1⅜	N.P.	Mountain & Gulf	.....	.....	.....	.....	.....	.....
.....	.....	30¼	29	....	Oklahoma Gas	25	29½	29½	29½	29½	+ ½
.47	.20	.75	.15	10	Omar O. & G	11,700	.42	*.75	.42	.75	+.40
.....	.....	2	1¾	5	Pittsburgh Oil Dev	.....	.....	.....	.....	.....	.....
27½	25	33½	20	10	Plymouth Oil	700	22	25	21½	25	+5
7	3	5½	3	5	States Oil	.....	.....	.....	.....	.....	.....
4	1⅞	3½	2	$ 1	Texon Oil & Land	1,580	2⅛	2¼	2⅛	2¼	+ ⅛
	9	24½	8	10	TidalOsage(non-voting)	1,800	22	*24½	22	24½	+4½

*New High †New Low xEx Dividend ‡Ex-Rights

NEW YORK BONDS

Week Ending Oct. 29

	High	Low	Last	Ch'ge
Amer. Rep. Deb. 6s	99¾	99¼	99½	+ ½
Associated Oil gold 6s	103	102¾	102¾	— ¼
Atlantic Refg. deb. 5s	100⅞	100½	100¾	— ⅛
Barnsdall Corp. 6s	97¼	96⅝	97	+1
Cal. Petrol. sf 6½s	104	103¾	103¾	0
Empire Gas & Fuel 7½s	103⅞	103⅜	103¾	+ ⅜
Empire Gas & Fuel 6½s	98¾	96¼	98⅝	+2
Gen. Asphalt 6s	107½	107¼	107½	0
Gen. Petroleum 5s	100¾	100⅛	100⅝	+ ½
Humble Oil & Refg. 5½s	102¾	102	102⅜	+ ⅜
Mid-Cont. Pet. 6½s	104½	104	104¼	— ⅛
Pan-Amer. P & T 7s	105½	105¼	105½	— ⅜
Pan-Amer. P & T 6s	105⅜	104½	105¼	+ ¾
Prod. & Refnrs.8s with w.i.	114⅛	114⅛	114⅛	+1⅜
Prod. & Refnrs. 8s	111	110	110	— ⅞
Sinclair Con. Oil Col. 7s	97½	96	97½	+1
Sinclair Con. Oil Con. 6½s	92	90¾	91⅜	— ⅜
Sinclair Con. Oil 6s	100⅜	99¾	100⅜	+ ⅜
Sinclair Crude Oil 6s	100⅞	100⅝	100⅝	0
Sinclair Pipe Line sf 5s	93	92½	92¾	— ¼
Union Oil of Cal. 6s-A	106¾	106¾	106¾	— ¼
Union Oil of Cal. 5s-C	98¾	98⅛	98⅛	0

NEW YORK CURB BONDS

Week Ending Oct. 29

	High	Low	Last	Ch'ge
Cities Serv. 6s '66	95¼	94¾	95¼	+ ¼
Cities Serv. 7s "D" '66	121	117⅜	120¼	+5½
Cities Serv. 8s "E" '66	128½	122⅛	128½	+9¼
Galena S. O. 7s '30	84½	83⅛	84¼	— ¼
General Pet. 6s '28	101⅜	101¼	101⅜	+ ⅛
Gulf Oil 5s '37	100¼	100¼	100¼	0
Indepen. Oil 6½s '31	97½	97	97½	0
Pan Amer. Pet. 6s '40	99½	99⅛	99⅜	0
Pure Oil 6½s '33	103½	103⅛	103½	+ ⅜
Richfield Oil 6s	99	99	99	0
S O N Y 6½s '33	105½	105¼	105¼	0
Sun Oil 5½s '39	99½	99⅜	99⅜	+ ⅛
Tidal Osage 7s '31	103	103	103	0
Trans. Cont. Oil 7s '30	97	96½	96¾	— ¼
United Oil Prod. 8s '31	38⅞	35¼	38⅞	0

Market Section

Standard Oil Stock Traded in New York Curb Market

1925 High	1926 Low	1926 High	1926 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended Oct. 29 Sales	First	High	Low	Last	Ch'ge
26⅝	17¼	19¼	16⅜	£ 4,000,000	£1	Anglo American	60¾cS.A.	May 27,26	11,100	18½	19½	18½	19½	+1
.....	.....	18¾	16½	.....	£1	do ctfsnon votg	.....	.....	2,300	18	*18¾	18	18⅝	+ ¾
4¼	1⅜	2¼	1⅜ (sh)	500,000	N.P.	Atlantic Lobos	.....	.....	300	1⅜	1⅜	1⅜	1⅜	+ ⅛
12¾	3	5	3⅜ $	10,000,000	$10	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
240	205	301	226	1,000,000	100	Borne Scrymser	$4S.A.	Oct. 15,26	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	....	do new	.....	.....	.....	.....	.....	.....	.....	.....
72	53½	59½	42	10,000,000	50	Buckeye Pipe Line	$1Q	Sept. 15,26	450	42⅞	44	42¼	42¼	— ¼
74	48½	75¼	65	3,000,000	25	Chesebrough Mfg	75cQ	Sept. 30,26	400	72	73	72	73	+ ¾
115	110	.....	.....	1,000,000	100	do pfd	$1¾Q	Sept. 30,26	.....	.....	.....	.....	.....	.....
81⅜	21⅜	25⅞	17⅜	34,914,280	10	Continental Oil	25cQ	Sept. 15,26	24,300	17⅝	18⅛	17⅜	17⅝	+1
17½	10	17	13½	1,500,000	25	Crescent Pipe Line	.....	Sept. 15,23	.....	.....	.....	.....	.....	.....
156	132	137	102	3,000,000	100	Cumberland Pipe Line	$3Q	Sept. 15,26	120	103¾	105¾	†102	104	0
96	61	63¾	43½	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1,26	100	45	45	45	45	0
68½	25½	32½	9⅞	16,000,000	100	Galena Signal Oil	.....	June 30,25	200	11⅜	11⅜	11¼	11¼	— ¼
105	88	94½	85	4,000,000	100	do new pfd	.....	June 30,26	110	36½	36½	35¾	35¾	+ ¼
114	95	97½	45¼	2,000,000	100	do old pfd	.....	June 30,26	80	48⅛	48⅛	†45¼	45¼	—2⅞
95	42¼	68¼	52	72,916,650	25	Humble Oil & Refining	30cQ	Oct. 1,26	6,900	52⅞	56¼	52¾	55¼	+2⅜
134½	127	144½	131	20,000,000	100	Illinois Pipe Line	$6S.A.	June 30,26	50	135	135	135	135	+1½
39¼	27¼	38¾	31½ sh	6,491,852	N.P.	Imperial of Canada	25cQ	Sept. 1,26	8,500	34¼	36⅞	34¼	36⅝	+1⅞
84	57⅜	70	55 $	5,000,000	50	Indiana Pipe Line	$1Q	Aug. 14,26	150	55	55	†55	55	— ½
55⅜	22⅜	35¼	28¾ sh	7,118,138	N.P.	International Petroleum	25cS.A.	Aug. 15,26	23,800	30¼	31½	30⅛	30⅜	+ ¾
25¾	16½	20⅜	13 $	6,362,500	$12½	National Transit	25cQ	Sept. 15,26	500	13⅛	13¼	13	13¼	+ ⅛
79	49¼	51½	27⅛	5,000,000	100	New York Transit	.....	July 15,26	100	27⅛	27⅛	†27⅛	27⅛	— ⅛
88	67¼	80½	64⅜	4,000,000	100	Northern Pipe Line	$3S.A.	July 1,26	150	64½	64½	†64⅜	64⅜	— ⅛
75¼	60¼	67⅜	55¾	60,000,000	25	Ohio Oil Co	50cQ	Sept. 15,26	2,000	57½	58¾	57⅜	58½	+1
44½	19	24¾	15	10,000,000	25	Penn Mex Fuel	.....	May 21,25	400	19¾	19¾	18¼	19	—1
65½	45⅞	60¼	48	60,000,000	25	Prairie Oil & Gas	50cQ	Aug. 31,26	6,700	49½	50⅛	49¼	49⅜	— ⅛
129¾	106	127½	122¼	81,000,000	100	Prairie Pipe Line	$2Q	Oct. 30,26	1,000	123¾	123¾	123¼	123½	— ¼
254	200	220	184½	4,000,000	100	Solar Refining Co	$5S.A.	June 19,26	10	194	194	194	194	—4
103	63	74½	24	10,000,000	100	Southern Pipe Line Co	.....	Mar. 1,26	100	24	24	24	24	— ½
47⅜	45	50	34½	20,000,000	25	South Penn Oil Co	87½cQ	Sept. 30,26	1,000	35⅛	35¼	34⅝	35½	+ ¼
84	50	56½	49	3,500,000	100	South West Pa. Pipe Line	$1Q	Oct. 1,26	.....	.....	.....	.....	.....	.....
70¾	59½	70½	60½ $	223,756,258	$25	S. O. Indiana	62½cQ	Sept. 15,26	23,500	61⅝	64⅛	61⅝	64⅞	+2½
46	30⅝	36½	16½	8,000,000	25	S. O. Kansas	.....	June 16,24	1,500	17¾	18⅛	17¾	18⅛	+ ⅜
137	114¾	134⅜	108	16,864,434	25	S. O. Kentucky	$1Q	Sept. 30,26	800	116½	117¾	116½	117¾	+1¼
.....	.....	51¾	42	4,518,000	25	S. O. Nebraska	63cQ	Sept. 20,26	600	44	45½	44	45½	+1¾
48¾	40¼	47¼	30⅜	858,102,000	25	S. O. New York	40cQ	Sept. 15,26	34,600	30¾	31⅞	30¾	31⅞	+1⅝
369	338	362	288	14,000,000	100	S. O. Ohio	$2½Q	Oct. 1,26	20	292	298	291	298	+9
125	116	122	117	7,000,000	100	do pfd	$1¾Q	Sept. 1,26	30	118¼	118¼	118¼	118¼	— ¼
27	12	23	15¼	1,722,931	25	Swan-Finch Co	.....	Nov. 1,19	.....	.....	.....	.....	.....	.....
109½	80⅝	112	90¼	61,919,950	25	Vacuum Oil Co	50cQ	Sept. 20,26	6,900	90¾	98¼	90¾	97¼	+6⅜

Cleveland Stock Market

	Par	Oct. 29 Bid	Asked	Last Sale
Canfield Oil Co	$100	110	.....	110
do pfd	100	.....	99	95
Fred G. Clark Co	10	3½	5	3⅝
National Refining Co	25	39	40	39
do pfd	100	130½	133	133
Paragon Refining Co	25	7⅜	7¾	7⅝
do pfd	100	.....	79	80

xEx-dividend

Oil Dividends

	Amt.	Payable	Stock of Record
Buckeye P. L. q	$1	Dec. 15	Nov. 19
Cities Service m	½%	Dec. 1	Nov. 15
do stock	½%	Dec. 1	Nov. 15
do pfd. m	½%	Dec. 1	Nov. 15
do pref. B m	½%	Dec. 1	Nov. 15
Gen. Asphalt pfd. q	$1.25	Dec. 1	Nov. 15
Independent O & G q	25c	Jan. 17	Dec. 30
International Pet	25c	Nov. 15	Nov. 6
Ohio Oil q	50c	Dec. 15	Nov. 13
do extra	50c	Dec. 15	Nov. 13
Pure Oil q	37½c	Dec. 1	Nov. 10
do extra	12½c	Dec. 1	Nov. 10
Union Associates q	50c	Nov. 10	Oct. 16
Mexican Eagle s. a	3½%	Nov. 1	.....

Skelly Oil Co.—Only $36,500 of the original issue of $6,850,000 6½ per cent convertible gold notes remain outstanding. Conversion privilege expired Sept. 30. Notes were convertible into common stock at par, $25.

Atlantic Refining Co.—V. L. Elliott appointed comptroller to succeed William McKaig who retired after 40 years' service with Atlantic.

New York Curb Market

1925 High	1925 Low	1926 High	1926 Low	Par Value	Stocks	Transactions week ended Oct. 29 Sales	First	High	Low	Last	Ch'ge
11½	2½	14½	4	$ 5	Amer. Maracaibo	27,600	4½	6⅞	4½	6¾	+2⅜
8⅜	5	8⅜	5¾	$10	Arkansas Nat. Gas.	1,300	8	8⅜	8	8⅜	— ⅜
.....	.....	19⅜	14⅛	N.P.	Beacon Oil	1,700	16	16¾	16	16¾	+ ¾
47½	38	.....	.....	$25	British-American	.....	.....	.....	.....	.....	.....
10¼	2¾	22⅞	9¼	25c	Carib. Syndicate	50,200	16⅜	19	16⅜	18⅛	+1½
43	35	48¾	37½	$20	Cities Service	22,100	45¾	*48¾	45¾	48⅜	+2⅝
85⅜	80¼	91⅝	82⅜	100	do pfd	4,600	90¼	*91⅝	90⅜	91½	+1¼
8	7¼	8⅜	7⅜	10	do pfd. B	2,000	8	* 8⅜	8	8⅜	+ ¼
21⅜	17½	22⅝	19	10	do bankers' sh	.....	.....	.....	.....	.....	.....
2¾	.60	3½	1¾	N.P.	Colombia Syndicate	21,500	1⅛	2⅛	1⅞	2	+ ⅛
15	8¼	16	10	N.P.	Creole Syndicate	35,800	12⅝	15⅞	12⅜	12⅝	+ ⅞
12¼	5	7⅜	1⅝	N.P.	Crown Central	1,300	2	2	1¾	1¾	— ¼
7	2	4	1⅛	N.P.	Derby Oil & Ref	.....	.....	.....	.....	.....	.....
27	10½	19	13	N.P.	do pfd	.....	.....	.....	.....	.....	.....
.....	.....	2¼	.60	.....	Euclid Oil	12,800	1	1⅛	1	1⅛	0
6	1⅜	7½	2½	N.P.	Gibson Oil	22,200	2¾	3½	2¾	3⅜	+ ⅝
3¾	1⅜	2	.63	N.P.	Gilliland v.t.c	700	.88	1	.88	1	—.25
98¼	63½	95	82	$25	Gulf Oil Corp	5,600	86¾	90	86⅛	90	+3
57⅞	2¼	4	1	N.P.	Kirby Petroleum	1,300	1⅜	1½	1⅜	1½	0
13	6	12¼	5¾	N.P.	Leonard Oil & Dev.	4,500	8	8	7	7⅝	+ ½
257⅞	18	253¾	20	N.P.	Lion Oil Refining	10,000	21⅛	22⅞	21⅛	22⅞	+1⅝
.....	.....	46	31½	$25	Lone Star Gas	.....	.....	.....	.....	.....	.....
4¼	1¾	3⅜	2	N.P.	Marland of Mexico	.....	.....	.....	.....	.....	.....
5¾	.56	5½	2⅛	$10	Mexican-Panuco	13,100	2¼	2½	2⅛	2½	+ ¼
2	1	1¾	1¼	1	Mountain & Gulf	100	1¼	1¼	† 1¼	1¼	— ⅛
26¼	18⅜	26	22½	10	Mountain Prod	6,400	23½	24⅛	23	24⅛	+1⅛
6¾	3⅝	6¾	5⅛	5	New Bradford	1,200	5⅛	5¼	5⅛	5¼	0
24¾	16¼	11¾	2	10	New England Fuel	.....	.....	.....	.....	.....	.....
10⅜	6½	17	9⅛	1	New Mex. & Ariz	700	9⅞	10¼	9¼	10¼	+ ¼
12½	8¼	17	8	25	New York Oil	200	10	10	9⅞	9⅞	0
37	14	36	34¼	25	Ohio Fuel Corp	.....	.....	.....	.....	.....	.....
.....	.....	9⅞	6	.....	Pandem	6,500	6½	7¼	6¼	7¼	+ ¼
2½	.90	2¾	.20	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
28¼	16	22¾	12	$10	Pennok Oil	500	13⅝	13⅝	13¼	13¾	+1
44½	16	38	14⅜	25	Red Bank Oil	800	21	25	21	25	+4¾
33½	19	28¾	12	N.P.	Reiter-Foster	5,300	13¼	14½	13	14½	+ ¾
.....	.....	27½	22	$25	Richfield Oil w.i	200	22	23	†22	23	—2¾
9½	3½	7½	4½	N.P.	Ryan Consolidated	200	5¼	5¼	5¼	5¼	+ ¾
9¾	6⅛	10	7½	$10	Salt Creek Cons	600	7½	7¾	7½	7¾	+ ¼
35	24	36	26⅞	10	Salt Creek Prod	3,100	27	29	27	28¾	+1½
3⅞	1	4	1⅜	5	Savoy Oil	.....	.....	.....	.....	.....	.....
13¾	9	25	7⅝	10	Tidal Osage	8,400	23	25	22¾	24½	+1
10⅞	8	25	8¼	10	do non-voting	17,900	21	*25	20½	24½	+3½
.....	.....	27	20⅞	N.P.	Tide Water Assoc	5,800	21¼	21⅞	21	21½	+ ¼
.....	.....	99¼	97½	100	do pfd	2,900	97½	97½	97½	97½	0
4⅞	1¾	8	4¼	5	Venezuelan Pet	9,700	5½	6¼	5½	6¼	+ ¾
.....	.....	29¾	23½	N.P.	Warner-Quinlan	600	24½	25	24½	25	+1
31¼	22⅛	36⅛	22	N.P.	Wilcox O. & G. new	500	26	26⅛	26	26⅛	— ⅜
7	3⅞	9½	4⅜	$ 1	Woodley Petroleum	300	7½	7½	7½	7½	0

*New High †New Low xEx-Dividend.

California Petroleum Refunds At Low Rate

CLEVELAND, Nov. 1.—California Petroleum Corp. has refunded its bonded indebtedness at a lower rate through the issue of $12,000,000 12-year convertible 5½ per cent sinking fund gold debentures. The entire issue has been subscribed for, the bankers, Blair & Co. and Hallgarten & Co., announced. The price was 98 and interest to yield approximately 5¾ per cent.

Proceeds from the issue are to be used to retire $5,963,000 principal amount of the corporation's 6½ per cent bonds, $514,000 of 6 per cent first mortgage bonds of the American Oil Fields Co. due Feb. 1, 1930, and for other corporate purposes including additional working capital.

The debentures are convertible into common stock at the option of the holder at $40 a share on or before Nov. 1, 1929; at $42.50 a share on or before Nov. 1, 1932; at $45 a share on or before Nov. 1, 1935, and at $50 a share thereafter. There is provision for a reduced conversion rate in the event of a stock dividend.

Consolidated net earnings of California Petroleum Corp., and subsidiaries including Ventura Consolidated Oil Field, California Gasoline Corp. and Mohawk Oil Co. after depreciation and depletion but before federal income taxes in the last five years have been:

1921	$5,400,357
1922	7,180,595
1923	8,783,566
1924	5,561,520
1925	9,137,752

President Jacques Vinmont in a letter to the bankers said the company from 1912 to 1925, inclusive, produced from controlled properties approximately 100,000,000 barrels of crude oil. In 1924 the corporation decided to enter the refining and marketing divisions and now is marketing in California, Oregon, Washington, Montana and Utah.

The consolidated balance sheet as of Aug. 31, adjusted to give effect to the present financing, Mr. Vinmont said, showed net quick assets in excess of $14,000,000 and a ratio of current assets over current liabilities of 3.7 to 1.

Properties of the corporation and subsidiaries, Mr. Vinmont wrote, include: "Approximately 50,000 acres of lands owned in fee and under leases principally in California, Montana and Utah; six refineries with an aggregate daily capacity of 56,000 barrels; 15 casinghead gasoline plants with combined daily capacity of 123,500 gallons of gasoline; distribution and miscellaneous facilities, including 105 miles pipe line, 45 tank cars, one steel tanker of 27,000 barrels capacity; bulk and retail service distribution stations and terminal facilities at Los Angeles, San Francisco, Oakland and Seattle harbors. The aggregate production from the properties at present averages about 45,000 barrels a day from approximately 675 wells."

THE OIL INDUSTRY EXCHANGE

Positions Wanted

EXPERIENCED OIL REFINERY DESIGNING AND MECHANICAL ENGINEER WANTED. Address Box 706 care this publication.

THOROUGHLY EXPERIENCED MARKETER of all petroleum products is open for immediate connection with reputable oil company. He knows the oil business from all angles, is competent to direct sales force, and is particularly well versed in the blending and application of smokestacks and motor oils; prefers the South but will go anywhere. Box 723.

GRADUATE PETROLEUM ENGINEER desires new connection. Several years' experience in refining and distribution of oils and napthas. Married. Now employed. Box 724.

POSITION WANTED by man thirty four years old, married, with sixteen years' experience with oil companies operating in the United States and Mexico as SECRETARY, PURCHASING AGENT AND EXECUTIVE work. Willing to take anything where there is opportunity to advance. References. Box 725.

SALES MANAGER; mechanical engineer, 16 years' experience in manufacturing and sale of machinery and engineering material. Successful training and working salesmen and road service men. Have had exceptional training and experience, merchandising and engineering lubricating oils. Broad acquaintance with manufacturers of Middle West, especially Detroit motor trade and steel manufacturers. Open for engagement January 1st. Box 714.

Situations Open

DIVISION SALES MANAGER

wanted by refiner-marketer, Kansas territory. Give references, age, salary desired and experience in detail to Box 722.

OIL SALESMAN for Automobile or Industrial Lubrication: We seek a man of enough energy and ambition to fit himself for subsequent promotion to supervisor or district manager. Write in confidence full details of education, experience, age, salary required. Appointment only by mail. Panhard Oil Corporation, 122 Greenwich Street, New York City.

MANAGER WANTED

A marketer and jobber of petroleum products desires to open Tulsa office and needs experienced manager well acquainted with refiners in Oklahoma and Texas. Give full particulars. State experience, etc. Applications will be treated strictly confidential.
Address Box 721

Advertisers having box numbers should be addressed in care of National Petroleum News, 817 Huron road, Cleveland, Ohio, unless otherwise specified.

For Sale

SULPHURIZED ANIMAL CUTTING OIL BASE FOR SALE

Heavy consistency, 4c per pound. Also, Black Recovered Lard Oil and Neatsfoot Oil Mixed, tank cars and barrels. Also Black Vegetable Grease for gear and fibre greases, 3c per pound.
Acme Oil Corporation
189 No. Clark St., Chicago, Ill.

These Savings Will Increase Your Working Capital

—Savings made by selling tanks, pumps, engines, etc. which you have replaced with new equipment.

Clean out your store room and yards — don't have your money tied up in equipment that you are not using.

One well known company wanted to dispose of some tanks and in writing to us to discontinue their advertisement said,

"We have had a great many replies from this ad and are satisfied that it is an excellent medium for the disposal of surplus material."

You can get the same results.

Miscellaneous

Complete Report Forms and Accounting Systems for the Oil Jobber
Ask About Our Free Accounting System Introductory Offer
Used by Independents All Over the Country. Write for Samples to
SHIRLEY PUBLISHING COMPANY
314 So. 4th St. Minneapolis, Minn.

WHAT IT COSTS

For "Position Wanted" advertisements—5 cents per word. Minimum cost $1.00. All other classified advertising—10 cents per word. Minimum cost $3.00. Advertisements set in special type or with border—$4.00 per column inch. Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

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